EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-23

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-W-12-013	04/30/2012 To 04/29/2016 Base Option Period Number 3	Response to Comments for Rules

Contractor: INDUSTRIAL ECONOMICS, INCORPORATED

Specify Section and paragraph of Contract SOW:

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 07/21/2015 To 04/29/2016

Comments:
The purpose of this amendment is to initiate Work Assignment (WA) 3-23. Robert (Drew) Lausch is appointed as the work assignment manager (WAM). The Level of Effort, (LOE) is in the amount of 1469 hours. The statement of work is attached. The contractor shall submit a work plan and cost estimate as it relates to this request.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): 22

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Cost/Fee:	LOE:
Contract Period: 04/30/2012 To 04/29/2016		0
This Action:		1,469
Total:		1,469

Work Plan / Cost Estimate Approvals

	Cost/Fee:	LOE:
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Robert Lausch (Signature) (Date)	Branch/Mail Code: Phone Number: 215-814-3359 FAX Number:
Project Officer Name: Shannon Sturgeon (Signature) (Date)	Branch/Mail Code: Phone Number: 703-605-0509 FAX Number: 703-308-7903
Other Agency Official Name: (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Eulvid Rocque (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-8316 FAX Number:

Statement of Work

CONTRACT NO. EPW – 12-013

Work Assignment No. WA – 3 - 23

Work Assignment Manager:

Robert Lausch
Office of Resource Conservation and Recovery
MC 5303P
1200 Pennsylvania Ave, NW
Washington, DC 20460
Phone: (703) 603-0721

TITLE: **Response to Comment for Three Rules**

OBJECTIVE

This Statement of Work (SOW) outlines tasks to be performed by Industrial Economics, Incorporated (IEc or contractor) in providing assistance to the U.S. Environmental Protection Agency (EPA or Agency) as part of the Agency's response to comments on three rules that are planned for proposal.

BACKGROUND

Each of these planned rules are discussed in EPA's Semiannual Regulatory Agenda, which can be accessed at http://www2.epa.gov/laws-regulations/regulatory-agendas-and-regulatory-plans by searching the Regulation Identifier Number (RIN)

- Hazardous Waste Export-Import Revisions Rule (RIN 2050-AG77)
- Hazardous Waste Pharmaceuticals Rule (RIN 2050-AG39)
- Hazardous Waste Generator Improvement Rule (RIN 2050-AG70)

Information is also available at http://www.regulations.gov for the Export-Import Revisions Rule (Docket EPA-HQ-RCRA-2015-0147) and Pharmaceuticals Rule (Docket EPA-HQ-RCRA-2007-0932). Additional information on the Export-Import Revisions Rule can be found at http://yosemite.epa.gov/opei/rulegate.nsf/byRIN/2050-AG77#4.

Anticipated proposal dates in the Federal Register are early August 2015 for the Pharmaceuticals and Generator Improvement Rules and late September 2015 for the Hazardous Waste Export-Import Revisions Rule.

As necessary, the EPA WA manager (WAM) will provide additional background information to IEc prior to the kickoff meeting.

For the purposes of this WA, EPA is estimating that the Agency will receive a minimum of 500 substantive comments (combined total for all three rules), although the actual number could be higher due to the possibility of mass mailing campaigns.

As part of support provided under this WA, EPA is requesting assistance in organizing and sorting comments by topic, including providing summaries of comments from major commenters, which will enable EPA to better evaluate and respond to the comments. The organization and sorting process shall utilize a database as discussed below. The particular types of summaries to be prepared (e.g., length, level of detail, identification of major issues, particular commenters), as well as the approach for organizing comments (e.g., by stakeholder), will be based on technical direction provided by the EPA WAM.

For the purposes of this WA, EPA is estimating that a total of 50 summaries will be requested to cover all three rules.

TASKS

1. Kickoff Meeting and Work Plan Development/Management

Prior to preparing the work plan (WP) or initiating any other task, IEc shall participate in a kickoff meeting with the EPA WAM to discuss the background and nature/intent of this WA. The kickoff meeting will be held via teleconference call and shall occur within one week after receipt of the WA.

IEc shall prepare a draft summary of the kickoff meeting, submit this summary for the WAM to review and comment and, as necessary, incorporate comments provided by the WAM into a final kickoff meeting summary. The kickoff meeting summary shall include a plan of action for implementing this WA [Task 1A].

IEc shall also prepare and submit for review a WP, staffing plan, and budget based on information presented in this SOW and discussions during the kickoff meeting. IEc shall incorporate comments provided by the WAM into a final WP [Task 1B].

The WP shall lay out cost and labor hour estimates by task. In staffing this work, the contractor shall include personnel with experience in the review and analysis of public comments associated with proposed rulemaking. The contractor will also conduct general management activities under this task. These activities shall include such efforts as project financial administration, periodic participation in conference calls and/or meeting with the EPA WAM, preparation of monthly progress reports, contract administration and management efforts. The contractor shall also provide updates on the status of each task to the EPA WAM via telephone conversations at least weekly.

In addition to the other requirements for the WP, approval of the WP for this assignment will be contingent upon the contractor's providing the basis for how Contract Management Costs will be calculated and reflected on each month's invoice.

Because the types of "data" involved in this SOW relate to organization of public comments, preparation of summaries, creation of associated reports and maintenance of a database, it is anticipated that quality assurance (QA) activities will not be extensive. As necessary, IEc shall briefly indicate in the WP how QA will be applied and include a brief (e.g., one paragraph or less) summary of QA activities in the monthly progress/invoice reports submitted to the WAM for this WA.

2. Comment Sorting/Organization and Summaries

The contractor shall provide technical support in organizing public comments received on each of the aforementioned rules upon proposal. Specifically, EPA is requesting use of an existing, contractor hosted or operated database that is capable of organizing sections of comment letters by issue. ***EPA does not intend for IEc to establish a new database for this WA and will not take ownership of this database.***

The database shall possess functionality to accomplish the following for each rule:

- Organize sections of comments by issue according to an outline that EPA will develop
- Bracket and assign sections of comments by issue
- Create reports by issue outline section. Reports would include all comments associated with an issue outline section or sub-section.
- Create comment summaries and responses by issue outline section.
- Create reports that show comments, summaries, and responses by issue outline section.
- Create a Response to Comment document that includes all comments, summaries, and responses for this rulemaking.

Specifically, the contractor shall perform the following tasks:

- Provide set-up, hosting and maintenance for up to six EPA users to an information technology database until April 29, 2016. It is anticipated that EPA will require access to this database throughout the period of performance for this WA. [Task 2A]

- Provide training materials or other basic training to EPA staff, as requested by EPA WAM. Training objectives are expected to address the ability to log into the system, create an issue outline, bracket and re-bracket comments, summarize and respond to comments, and produce reports. EPA believes that training can be satisfied through distribution of a users' manual or instructions. To this end, IEc is encouraged to provide users manuals and/or demonstrations of their website (i.e., by allowing EPA access to the database in order to evaluate this service). ***IEc should indicate if face-to-face training, including in-person demonstrations, will be required to accomplish these objectives.*** [Task 2B]

- Assist with loading comment letters and other materials from each rulemaking docket into the database. This includes all applicable materials submitted to Docket EPA-HQ-RCRA-2015-0147 and Docket EPA-HQ-RCRA-2007-0932, as well as the Docket to be established for the Generator Improvement Rule. [Task 2C]

- Assist with loading issue outlines for each rule (and any changes to issue outlines), as requested by the EPA WAM. [Task 2D]

- Assist EPA users with basic technical support (e.g., passwords, questions on system functionality and use) for the remainder of the period of performance of this WA. [Task 2E]

3. Additional Meetings

It is anticipated that the majority of communications can be accomplished remotely through telephone calls, teleconference calls and e-mails. However, if determined to be necessary by the EPA WAM, this WA allows for the scheduling of up to two face-to-face meetings of one-day duration (not including associated travel time by IEc) at the Agency's Arlington, VA office to be attended by up to two staff members from the IEc office in Cambridge, MA. Actual meeting dates will be determined by the EPA WAM in consultation with IEc. The WAM will develop a meeting agenda in consultation with IEc.

IEc shall also prepare a draft summary of these meetings, submit the summary for EPA review/comment and, as necessary, incorporate comments provided by the WAM into a final meeting summary.

SCHEDULE OF DELIVERABLES

Deliverable	Due Date
Kickoff Meeting Summary [Task 1A]	Draft within five days after kickoff meeting and final within five days after receipt of EPA comments
Work Plan and Related Planning Documents [Task 1B]	Draft within 20 days of receipt of the WA and final within ten days after receipt of EPA comments
Provide access to database for EPA staff [Task 2A]	Within ten days after kickoff meeting
Provide training materials to EPA [Task 2B]	TBD based on discussions at kickoff meeting
Complete loading of public comments and other materials from each docket into database [Task 2C]	Within ten days after all comments are received in each docket
Place issue outline for each rule into database [Task 2D]	Within ten days of receiving outline for each rule from EPA

Technical support for database users [Task 2E]	Ongoing
Additional Meeting Summary [Task 3]	Draft within five days after kickoff meeting and final within five days after receipt of EPA comments
Days shall mean calendar days unless otherwise specified by the EPA WAM.	

TECHNICAL DIRECTION

In accordance with EPAAR 1552.237-71–*Technical Direction*, the EPA WAM will provide Technical Direction during performance of this WA. Technical direction includes:

(1) Instruction to the contractor that approves approaches, solutions, designs, or refinements; fills in details; completes the general description of work; shifts emphasis among work areas or tasks; and

(2) Evaluation and acceptance of reports or other deliverables.

Technical Direction must be within the scope of the contract-level SOW. The EPA WAM does not have the authority to issue Technical Direction which:

(1) Requires additional work outside the scope of the contract or WA;
(2) Constitutes a change as defined in the "Changes" clause;
(3) Causes an increase or decrease in the estimated cost of the contract or WA;
(4) Alters the period of performance of the contract or WA; or
(5) Changes any of the other express terms or conditions of the contract or WA.

Technical Direction will be issued in writing (e-mails will be considered acceptable to accomplish this purpose) by the EPA WAM or, in the case of oral issuance, confirmed by the WAM in writing within five (5) calendar days after oral issuance.

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-23

☐ Other ☒ Amendment Number: 000001

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-W-12-013	04/30/2012 To 04/29/2016 Base Option Period Number 3	Resp. to Comments for 3 Rules

Contractor: INDUSTRIAL ECONOMICS, INCORPORATED

Specify Section and paragraph of Contract SOW:

Purpose:
- ☐ Work Assignment
- ☒ Work Assignment Amendment
- ☐ Work Plan Approval
- ☐ Work Assignment Close-Out
- ☐ Incremental Funding

Period of Performance: From 07/21/2015 To 04/29/2016

Comments:
The purpose of this amendment is to approve the contractor's work plan/cost estimate dated August 20, 2015 with a level of effort (LOE) of 1469 hours and $145,652.49 (b)(4) cost (b)(4) fee). The contractor is not authorized to go over the approved ceiling without approval from the Contracting Officer.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): 22

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Cost/Fee:	LOE:
Contract Period: 04/30/2012 To 04/29/2016		1,469
This Action:		0
Total:		1,469

Work Plan / Cost Estimate Approvals

	Cost/Fee:	LOE:
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Robert Lausch (Signature) (Date)		Branch/Mail Code: Phone Number: 215-814-3359 FAX Number:
Project Officer Name: Shannon Sturgeon (Signature) (Date)		Branch/Mail Code: Phone Number: 703-605-0509 FAX Number: 703-308-7903
Other Agency Official Name (Signature) (Date)		Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Eulvid Rocque (Signature) (Date)		Branch/Mail Code: Phone Number: 202-564-8316 FAX Number:

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-25

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-W-12-013	04/30/2012 To 04/29/2016	City of New Bedford, Parker St
	Base Option Period Number 3	

Contractor: INDUSTRIAL ECONOMICS, INCORPORATED

Specify Section and paragraph of Contract SOW:

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 07/21/2015 To 04/29/2016

Comments:
The purpose of this amendment is to initiate Work Assignment (WA) 3-25. Laura Chan is appointed as the work assignment manager (WAM) and Nadine Thys is appointed as the Alternate WAM. The Level of Effort, (LOE) is in the amount of 106 hours. The statement of work is attached. The contractor shall submit a work plan and cost estimate as it relates to this request.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): 22

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Cost/Fee:	LOE:
Contract Period: 04/30/2012 To 04/29/2016		0
This Action:		106
Total:		106

Work Plan / Cost Estimate Approvals

	Cost/Fee:	LOE:
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Laura Chan (Signature) (Date)	Branch/Mail Code: Phone Number: 617-918-1086 FAX Number:
Project Officer Name: Shannon Sturgeon (Signature) (Date)	Branch/Mail Code: Phone Number: 703-605-0509 FAX Number: 703-308-7903
Other Agency Official Name: (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Eulvid Rocque (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-8316 FAX Number:

CONTRACT NAME: ERAS Analytical Support Contract
CONTRACTOR: Industrial Economics, Incorporated

CONTRACT NO. EPW – 12-013

Work Assignment No. WA 3-25

Contracting Officer Representative (COR):

Laura Chan
U.S. EPA Region 1
Office of Site Remediation and Restoration
Contracts Management Section
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Fax: (617) 918-0086

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U.S. EPA Region 1
Office of Site Remediation and Restoration
Contracts Management Section
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Boston, MA 02109-3912
Thys.nadine@epa.gov
Phone: 617-918-1419
Fax: 617-918-0419

TITLE: Ability to Pay Analysis for the City of New Bedford re: Parker Street Waste Site Cost Recovery

BACKGROUND

The Parker Street Waste Site is an approximately 122-acre area redeveloped on and centered around a former city-owned landfill located in New Bedford, Bristol County, Massachusetts. Several residential and commercial properties were identified with elevated levels of polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and/ or heavy metals in soils at or near the surface, which posed an imminent and substantial endangerment to public health. From October 29, 2010 to August 22, 2012 EPA undertook a removal action to address these risks.

As the owner of the former landfill, EPA considers the City of New Bedford to be the Potentially Responsible Party and is seeking to recover a portion of the funding the agency expended in addressing the imminent and substantial endangerment presented by the City of New Bedford's former waste dump.

PURPOSE AND OBJECTIVES

The purpose of this work assignment is to obtain the services of expert financial analysts (e.g. a certified public account experienced in analyzing the fiscal vitality of municipalities) in order to review, verify and analyze the financial ability of the City of New Bedford to reimburse all or a portion of EPA's waste cleanup costs incurred at the Parker Street Waste Site. The contractor shall use, but is not limited to, the information provided by the City of New Bedford to EPA. The contractor shall provide data/information gathering and analysis that ensures a high quality and defensible financial analysis. All aspects of data collection, review and verification shall be conducted and documented in accordance with financial industry-accepted guidelines.

Task 1: Work Plan

Prepare and submit a Work Plan that includes a detailed description of the tasks activities, performance monitoring, and overall management strategy. Typical activities involved in preparing the staffing plan include, but are not limited to the following:

1. A staffing plan that identifies personnel who will work on the work assignment;
2. A work schedule identifying significant milestones and deliverables;
3. Quality assurance measures;
4. A conflict of interest certification; and,
5. A price proposal for performance of the work required on the work assignment, including a breakdown of the price per individual (identified by name) in each labor category, along with the cumulative estimated hours for each labor category. Other costs – including ODCs – shall be identified in the proposal.

Task 2: Data and Information Collection, Analysis and Management

Utilizing a certified public account experienced in analyzing the fiscal vitality of municipalities in order to **review, verify and analyze the financial ability of the City of New Bedford to reimburse all or a portion of EPA's waste cleanup costs incurred at the Site.** The contractor shall use, but is not limited to, the information provided by the City of New Bedford to EPA and provided to the contractor (see Appendix A: Munipay Data Request Form). The contractor shall provide data/information gathering and analysis that ensures a high quality and defensible financial analysis. All aspects of data collection, review and verification shall be conducted and documented in accordance with financial industry-accepted guidelines. All documents prepared under this task shall respond to issues identified by EPA during the initial planning call and subsequent communications and include supporting references and rationale for the recommendations and conclusions given. The contractor shall ensure that all draft and final documents display financial accuracy, defensibility, are error-free and are editorially correct.

Task 3: Document Preparation

All documents prepared under this task shall respond to issues identified by EPA and include supporting references and rationale for the recommendations and conclusions given. The contractor shall ensure that all draft and final documents display financial accuracy, defensibility, are error-free and are editorially correct.

Confidentiality Agreement

The Contractor recognizes that the Contractor employees performing tasks specified by this task order may have access to data or information, either provided by the government or first generated during task order performance, of a sensitive nature which should not be released to the public without approval from the Environmental Protection Agency (EPA). Therefore, the Contractor agrees to obtain confidentiality agreements from each of its employees assigned to work on this task order (including subcontractors or consultants) before they perform any work under this task order.

Such agreements shall contain provisions which stipulate that each employee agrees that the employee will not disclose, either in whole or in part, to any entity external to the EPA, the Department of Justice, or the Contractor, any information or data (as defined in FAR Section 27.401) provided by the government or first generated by the Contractor, any site-specific cost information, or any enforcement strategy without first obtaining the written permission of the EPA Project Officer. If a Contractor, through an employee or otherwise, is subpoenaed to testify or produce documents, which could result in such disclosure, the Contractor must provide immediate advance notifications to the EPA so that the EPA can take action to prevent such disclosure.

Schedule of Deliverables

The contractor shall perform/submit the following tasks and deliverables at the timeframe specified below:

Deliverable Title	Due Date
Initial Planning Conference Call & Response to WA	Schedule call within 2 days of receipt of WA
Workplan, staffing and budget	Within 2 days of the initial planning call
EPA provide information listed on Munipay Data Request Form and other documents	TBD
Contractor Review EPA-provided information and identify any additional needed information	Within 5 days of receipt.
EPA obtains additional information from City	TBD
EPA directs Contractor to obtain additional information if necessary	Within 1 day of request.
Initial written analysis	Within 10 business days of receipt of all financial information.
Conference call to discuss initial analysis; contractor to provide meeting notes	Within a week of EPA's receipt of initial written analysis; notes delivered within one day of call.
Complete any follow-up issues identified during above call	Within a week of conference call re: initial analysis.
Deliver final written report	Within a week of conference call re: initial analysis.

Note: All deliverables will be submitted to both the COR and any Regional lead case contact(s).

APPENDIX A:

Munipay Data Request Form

MUNIPAY DATA REQUEST FORM

Updated for model version 4.4.1 (January 2015)

U.S. CENSUS DATA

	Census Values	
	2000	2010
Population:		
Number of Persons Age 18 and Above:		
Number of Persons Age 65 and Above:		
Number of Individuals Below 125% of Poverty:		
Median Home Value:		
Median Household Income:		

Go to www.census.gov and click on "American FactFinder" under Data and choose "Advanced Search" (from either the top menu bar or the arrows on the left). Specify the municipality name under "Geographies" then search for the table codes listed below. For the 2000 tables, the Dataset in the final column should be 2000 SF3 Sample Data. For the 2010 tables, the Dataset should ideally be "2010 ACS 1-year estimates" although if that option is not available, then choose the closest equivalent (i.e., 3-year estimates, or if those are not available, then 5-year estimates).

	Census Designation	
MUNIPAY Input	2000	2010
Total population	P001	DP-1
18 years and over	P008	DP-1
65 years and over	P008	DP-1
Number of Individuals Below 125% of Poverty	P088	S1701
Median Home Value	H076	B25077
Median Household Income	P053	B19013

FINANCIAL DATA

MUNIPAY runs its affordability analysis on financial data, which typically concerns the Governmental Funds of a municipality. This corresponds to the "City/Town/Village" selection under the "entity type" entry. But for a Clean Water Act or Safe Water Drinking Act case, the relevant data (and corresponding entity type selection) probably concerns a municipality's Enterprise Fund, which accounts for municipal activities that operate more like a business (i.e., levying charges upon users in relation to services consumed).

If a Clean Water Act or Safe Water Drinking Act case involves a regional authority not tied to any single municipality, then select the Enterprise Fund type, but enter a zero for all the fields related to the General Fund. (Note that such an independent and publicly owned utility is not the same as a privately owned yet publicly regulated utility, for which no EPA screening model exists.)

For Superfund cases, a municipality will sometimes have an Enterprise Fund that accounts for the operations of its municipal landfill. For RCRA cases, a municipality will sometimes have an Enterprise Fund that accounts for activities related to the violation. Both of these situations are fairly rare, and even if such an Enterprise Fund exists, an analysis of the municipality's Governmental Funds may be more relevant.

For other types of local and regional governmental jurisdictions, contact the U.S. EPA Helpline at 888-ECONSPT for guidance on MUNIPAY's applicability.

In addition to the data items below, the municipality should provide for the last three years its: annual audited financial statements, bond prospectuses, and budgets (especially for the anticipated General Fund expenditures). Financial statements and bond prospectuses may also available for many cities from municipality websites or even commercial providers.

Common Financial Data

General Fund Unreserved Balance: (for most recent fiscal year; omit if independent utility)

Anticipated General Fund Expenditures Plus Net Transfers: (formally budgeted or merely projected)

Median Household Income: (either U.S. Census, or more recent estimate)

Year of Estimate:

City/Town Village Financial Data (i.e., Governmental Funds)

Annual Debt Payments: (sum of principal and interest payments for all Governmental Funds)

Total Revenues: (for all Governmental Funds, but exclude transfers between funds)

Direct Net Debt: (gross debt incurred in municipality's name, less short-term and revenue debt)

Overall Net Debt: (above + overlapping/underlying gov't units' debt apportioned by property value)

State Debt Limit: (attach calculations, or note if state imposes no such limit)

Market Value of Taxable Property: (attach calculations if converted from assessed)

Median Home Value: (either U.S. Census, or more recent estimate)

Year of Estimate:

Enterprise Fund Financial Data

Current Assets: (exclude any restricted assets)

Current Liabilities: (exclude liabilities payable from restricted assets)

Annual Debt Payments: (sum of principal and interest payments from Statement of Cash Flows)

Operating Revenues:

Operating Expenses:

Anticipated Expenses Plus Net Transfers: (budgeted or projected)

Average Annual Residential Charge: (typically based on 90,000 gallons for water/sewer)

Serviced Households: (if unknown, use number of households from U.S. Census)

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-25

☐ Other ☒ Amendment Number: 000001

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-W-12-013	04/30/2012 To 04/29/2016 Base Option Period Number 3	ATP for Parker St. Waste Site

Contractor: INDUSTRIAL ECONOMICS, INCORPORATED

Specify Section and paragraph of Contract SOW:

Purpose:
- ☐ Work Assignment
- ☒ Work Assignment Amendment
- ☐ Work Plan Approval
- ☐ Work Assignment Close-Out
- ☐ Incremental Funding

Period of Performance: From 07/21/2015 To 04/29/2016

Comments:
This amendment is to approve and accept the contractor's work plan/cost Estimate dated 8/5/2015 with a level of effort of 106 hrs. and $11,718.82 (b)(4) cost (b)(4) fee). The contractor is not allowed to go over the approved ceilings without the approval of the Contracting Officer.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): 22

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Cost/Fee:	LOE:
Contract Period: 04/30/2012 To 04/29/2016		106
This Action:		0
Total:		106

Work Plan / Cost Estimate Approvals

	Cost/Fee:	LOE:
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Laura Chan (Signature) (Date)	Branch/Mail Code: Phone Number: 617-918-1086 FAX Number:
Project Officer Name: Shannon Sturgeon (Signature) (Date)	Branch/Mail Code: Phone Number: 703-605-0509 FAX Number: 703-308-7903
Other Agency Official Name: (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Eulvid Rocque (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-8316 FAX Number:

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-26

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-W-12-013	04/30/2012 To 04/29/2016	Ind. Waste Measurement Study
	Base Option Period Number 3	

Contractor: INDUSTRIAL ECONOMICS, INCORPORATED

Specify Section and paragraph of Contract SOW:

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 09/02/2015 To 04/29/2016

Comments:
This is to initiate WA 3-26 entitled "Industrial Waste Measurement Scoping Study". Nicole Villamizar is appointed as the work assignment manager (WAM). The Level of Effort, (LOE) is for 770 hours. Please note the statement of work is attached. The contractor shall submit a work plan and cost estimate as it relates to the subject matter.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): 22

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Cost/Fee:	LOE:
Contract Period: 04/30/2012 To 04/29/2016		0
This Action:		770
Total:		770

Work Plan / Cost Estimate Approvals

	Cost/Fee:	LOE:
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Nicole Villamizar (Signature) (Date)	Branch/Mail Code: Phone Number: 703-347-8952 FAX Number:
Project Officer Name: Shannon Sturgeon (Signature) (Date)	Branch/Mail Code: Phone Number: 703-605-0509 FAX Number: 703-308-7903
Other Agency Official Name: (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Eulvid Rocque (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-8316 FAX Number:

EPA CONTRACT NUMBER EP-W-12-013
STATEMENT OF WORK

Work Assignment Number: **3-26**

Title: Industrial Waste Measurement Scoping Study

Work Assignment Manager (WAM): **Nicole Villamizar**

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I. Background

The U.S. Environmental Protection Agency ("EPA" or "the Agency")'s Resource Conservation and Sustainability Division (RCSD) focuses on advancing Sustainable Materials Management (SMM). SMM refers to the use and reuse of materials in the most productive and sustainable way across their entire life cycle, an approach that has the potential to conserve resources, reduce waste, address climate change, and minimize the environmental impacts of the materials we use.

Nonhazardous industrial wastes (including Bevill exempt wastes) are the byproducts resulting from manufacturing commodities and products, such as coal ash from electricity production, iron and steel slag from metal production, mining wastes, and inorganic chemical wastes. Beneficial use is the recycling or reuse of previously wasted materials that would otherwise be disposed. In this way, beneficial use gives materials a "second life", and what once was thought of as a costly burden for disposal can actually become a valuable resource for the production of other commodities.

The Agency supports the beneficial use of nonhazardous industrial materials when conducted in an environmentally acceptable manner, and has developed a number of tools and assessments to support state regulators and beneficial users with their beneficial use evaluations. For more information on EPA's efforts in this area, visit www.epa.gov/industrialmaterials.

For over 20 years, EPA has produced the *Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures* report that has taken into account the generation and recycling rates of municipal solid wastes. In 2015, the name of the report evolved to reflect the ongoing progress and commitment of the EPA to SMM: *Advancing Sustainable Materials Management: Facts and Figures 2013*. The report, which was released in June of 2015, emphasizes the importance of SMM and

focuses on the use and reuse of materials in the most productive and sustainable way across their entire life cycles. The June 2015 report is also the first report that includes estimates for the generation of construction and demolition (C&D) materials, focusing on steel, wood products, brick, drywall, asphalt concrete, and portland cement concrete.

The Agency is considering the addition of industrial waste generation and recovery estimates to its *SMM Facts & Figures* report series. To support such an effort, a scoping study is needed to identify and assess data sources and develop potential methodologies that may be used by the Agency to estimate national generation and recovery rates.

II. Purpose & Objectives

The purpose of this work assignment is to conduct a scoping study to (1) identify, compile and assess available data sources that may be used to estimate national generation and recovery rates for the industrial wastes outlined below; (2) develop options and recommendations for potential methodologies the Agency may use to estimate national *generation* rates for a subset of industrial wastes (to be determined based on the assessment of available data and in consultation with the EPA WAM), and (3) develop options and recommendations for potential methodologies the Agency can use to estimate national *recovery* rates for a subset of industrial wastes (to be determined based on the assessment of available data and in consultation with the EPA WAM). The industrial wastes to be considered in the scoping study are:

1. Mining waste
2. Oil & Gas Waste
3. Foundry Sand
4. Iron and Steel Slag
5. Mineral Processing Waste
6. Coal Combustion Residuals (Coal Fly Ash, Bottom Ash, Flue-gas Desulfurization (FGD)Material, Boiler Slag)
7. Cement Kiln Dust
8. Pulp and Paper Byproducts
9. Sewage Sludge
10. Textile Manufacturing Waste
11. Potentially 1-2 other Industrial Wastes, to be determined in consultation with the Contractor and EPA WAM

III. Scope of Work

Consistent with the purpose and objectives, the scope of this Work Assignment involves:

- Identifying and compiling existing data sources that can be used to estimate national generation and recovery rates for the nonhazardous industrial wastes described in Section II above;

- Analyzing the viability of the data sources based on criteria developed by the EPA, in consultation with the Contractor, for the purpose of developing methodologies to estimate national generation and recovery rates;
- Developing options and recommendation(s) for methodologies that the Agency can potentially use to estimate national generation rates for a subset of industrial wastes, taking into account the results of the data viability analysis; and
- Developing options and recommendation(s) for methodologies that the Agency can potentially use to estimate national recovery rates for a subset of industrial wastes.

The Contractor shall identify data from a wide variety of public and private sources, such as the U.S. Department of Commerce, U.S. Department of Energy, U.S. Geological Survey, trade organizations, state regulatory agencies, local governments, and other sources, as appropriate. When performing all tasks of this work assignment the Contractor shall ensure that examined data, sources, and calculations are at the highest levels of quality. The EPA WAM also will provide the Contractor with existing data sources and suggestions for data sources as a starting point. The Contractor shall conduct the following Tasks to accomplish the objectives of this Scope of Work.

IV. Schedule of Tasks

Task 1: Work Plan, Budget, and Progress Reports

No later than twenty (20) calendar days after the receipt of the Work Assignment, the Contractor shall prepare and deliver a work plan. The work plan shall include:

1. The level of effort required for each of the tasks;
2. A proposed budget including other direct costs;
3. A schedule for providing deliverables;
4. Names and contact information of key staff working on this work assignment;
5. A description of how each task will be performed and completed; and
6. A plan of how the Contractor will apply quality assurance (QA) to the compiled information.

Upon approval of the work plan, the Contractor shall maintain bi-weekly communication with the WAM on the progress of tasks.

In addition to the work plan, the Contractor shall prepare and deliver a monthly administrative technical and financial progress report. Each report shall include:

- Descriptions of work performed and deliverables submitted;
- Problems encountered and proposed solutions;
- Anticipated activities for the next reporting period;
- The financial status of the project including the status of remaining funds; and
- Any lagging costs and any other requirements; and

- A brief summary of QA activities performed by the Contractor.

Note on Quality Assurance
Because the types of data involved in this work assignment may mostly come from existing secondary sources which have already been subject to QA (e.g., peer-reviewed journals, and other Federal agencies such as the U.S. Geological Survey, the Census Bureau, and the Bureau of Labor Statistics), the QA activities for this work assignment/task order may only require the Contractor to examine data, sources, and calculations to ensure the highest levels of quality in accordance with EPA policies.

Deliverables for Task 1: The Contractor shall deliver a one-time completed work plan with the above mentioned criteria, maintain bi-weekly communication, and submit monthly progress reports in accordance with the requirements of the Contract.

Deliverable	Due Date
Work Plan	No later than 20 calendar days after the receipt of the Work Assignment
Communication with the EPA WAM	Bi-weekly
Technical and Financial Progress Reports	Monthly

Task 2: Identify and Assess Available Data Sources for Industrial Waste Generation and Recovery

Under this task, the Contractor shall (1) identify and assess available data sources, and (2) recommend appropriate subsets of industrial waste pertaining to both generation and recovery rates for those industrial waste streams.

Waste Stream Data Source Assessment
The Contractor shall consider the available data sources pertaining to the following waste streams in the identification and assessment process:

1. Mining waste
2. Oil & Gas Waste
3. Foundry Sand
4. Iron and Steel Slag
5. Mineral Processing Waste
6. Coal Combustion Residuals (Coal Fly Ash, Bottom Ash, FGD Material, Boiler Slag)
7. Cement Kiln Dust
8. Pulp and Paper Byproducts
9. Sewage Sludge
10. Textile Manufacturing Waste
11. Potentially 1-2 other Industrial Wastes, to be determined in consultation with the Contractor and EPA WAM

If, in the Contractor's assessment of available data sources, additional industries or waste streams not listed above are revealed to contain a considerable amount of waste, they may be included in the deliverable upon approval by the EPA WAM through a technical directive.

As a starting point, Table 1 below provides a list of some existing websites, documents, and/or other resources to consider when performing the assessment. The EPA shall provide the Contractor with additional data sources and technical resources to assist with the assessment through subsequent TDs or other communications.

Table 1: Existing Resources to Consider	
Resource	**Location**
IEc Waste Wheel Update Summary	See Appendix A

Criteria by Which to Assess the Data Sources

The Contractor shall assess the sources of data for the waste streams using the following criteria, which may be enhanced/augmented through discussions with the EPA WAM and in consultation with the Contractor:

- Availability of data (are there any existing data available? Are the data publically available? Are there any costs involved?)
- Frequency of data (annual, bi-annual, periodic, erratic, unclear, etc)
- Reliability of data (nature of source, robustness of methodology, input data QA, etc)
- Whether regulatory (federal or state) mandates require the information to be collected and if not, estimation of what proportion of the surveyed sector is captured
- Whether the corresponding recycling or beneficial use data are available or whether an alternative approach can be used to estimate recycling/beneficial use amounts
- Other Criteria, as determined by the EPA WAM in consultation with the Contractor

Recommendation of Subset of Waste Streams

Based on the analysis of available data, the contractor shall recommend a subset of industrial waste streams (approximately 4-7) for the development of generation and recovery methodologies. This recommendation will be based on the analysis of available data and in consultation with the EPA WAM. The EPA WAM will provide comment on the recommendations of the findings made by the Contractor.

Deliverables for Task 2

The Contractor shall provide the EPA WAM in electronic format with a list of available data sources for each of the identified industrial waste streams as well as the analysis of the viability of the data sources for potential use in estimating national generation and/or recovery amounts.

Deliverable	Due Date
First Draft Memorandum: Analysis of Available Data with Recommendation	TBD through a TD from the EPA WAM

Deliverable	Due Date
for a subset of Industrial Wastes for Estimating National Generation and/or Recovery Amounts	
Second Draft Memorandum: Analysis of Available Data with Recommendation for a subset of Industrial Wastes for Estimating National Generation and/or Recovery Amounts	Two weeks after receiving final comments on the first draft from the EPA WAM
Final Memorandum: Analysis of Available Data with Recommendation for a subset of Industrial Wastes for Estimating National Generation and/or Recovery Amounts	Two weeks after receiving final comments on the second draft from the EPA WAM

Task 3: Options and Recommendations for Methodologies to Estimate National Generation Rates for a Subset of Industrial Wastes

The Contractor shall develop and submit options and recommendation(s) to the EPA for methodologies the Agency could potentially use to estimate national generation rates for a **subset of industrial wastes (approximately 4-7 waste types).**

The Contractor shall describe the proposed methodologies (materials flow, survey data, disposal data, etc.) and provide the supporting data sources, calculations and/or other algorithms that would be involved in estimating each type of industrial waste. Table 2 provides references that can be used as examples of appropriate scope and format for the methodologies.

Table 2: Example Resources for Scope & Format of Options for Methodologies	
Resource	**Location**
C&D Methodology Scoping Study Memo	See Appendix B
Advancing Sustainable Materials Management: Facts and Figures 2013: Appendix A & Appendix B (pp 156-173)	http://www.epa.gov/osw/nonhaz/municipal/pubs/2013_advncng_smm_rpt.pdf
MSW Characterization Methodology	See Appendix C

Deliverables for Task 3

The Contractor shall submit, in electronic memorandum format, draft and final options and recommendations for potential methodologies the Agency can use to estimate national generation rates for the subset of industrial wastes.

Deliverable	Due Date
First Draft Memorandum: Options and Recommendations for Methodologies to Estimate National Generation Rates for subset of industrial wastes	TBD through a TD from the EPA WAM
Second Draft Memorandum: Options and Recommendations for Methodologies to Estimate National Generation Rates for subset of industrial wastes	Two weeks after receiving final comments on the first draft from the EPA WAM
Final Memorandum: Options and Recommendations for Methodologies to Estimate National Generation Rates for subset of industrial wastes	Two weeks after receiving final comments on the second draft from the EPA WAM

Task 4: Options & Recommendations for Methodologies to Estimate National Recovery Rates for a Subset of Industrial Wastes

The Contractor shall develop and submit options and recommendation(s) for methodologies the Agency can potentially use to estimate national recovery rates for a **subset of industrial wastes (approximately 4-7 waste types).** The subset of industrial wastes shall be based on the Analysis of Available Data (Task 2), the results of Task 3, and in consultation with the Contractor, and will be identified via TD by the EPA WAM.

The Contractor shall describe the proposed methodologies (materials flow, survey data, disposal data, etc.) and provide the supporting data sources, calculations and/or other algorithms that would be involved in measuring each type of industrial waste. The Contractor also shall make recommendation(s) regarding the proposed methodologies. Table 3 provides references that can be used as examples of appropriate scope and format for the methodologies.

Table 3: Example Resources for Scope & Format of Options for Methodologies	
Resource	**Location**
C&D Methodology Scoping Study Memo	See Appendix B
Advancing Sustainable Materials Management: Facts and Figures 2013: Appendix A & Appendix B (pp 156-173)	http://www.epa.gov/osw/nonhaz/municipal/pubs/2013_advncng_smm_rpt.pdf

Deliverables for Task 4:

The Contractor shall submit, in electronic memorandum format, first and second draft and final options plus recommendations for potential methodologies the Agency can use to estimate national recovery/beneficial use rates for the subset of industrial wastes.

Deliverable	Due Date
First Draft: Options & Recommendations for Methodologies to Estimate National Recovery Rates for subset of industrial wastes	TBD through a TD from the EPA WAM
Second Draft: Options & Recommendations for Methodologies to Estimate National Recovery Rates for subset of industrial wastes	Two weeks after receiving final comments on the first draft from the EPA WAM
Final Draft: Options & Recommendations for Methodologies to Estimate National Recovery Rates for subset of industrial wastes	Two weeks after receiving final comments on the second draft from the EPA WAM

Task 5: Scoping Study Final Report

Under this Task, the Contractor shall compile and integrate the final drafts of the memoranda produced under Tasks 2-4 to serve as the basis for the Final Report. The report, which can be in Memorandum format, shall document the following:

- Analysis of available data sources (Task 2);
- Subset of industrial wastes selected for estimating national generation and recovery rates (Task 2);
- Options and recommendations for methodologies estimating national generation rates for the subset of industrial wastes; (Task 3) and
- Options and recommendations for methodologies estimating recovery rates for the subset of industrial wastes (Task 4).

Deliverable	Due Date
Initial Draft Scoping Study Final Report	TBD through a TD from the EPA WAM
Second Draft Scoping Study Final Report	Two weeks after receiving final comments on the initial from the EPA WAM
Scoping Study Final Report	Two weeks after receiving final comments on the second draft from the EPA WAM

V. Summary of Schedule of Deliverables

Industrial Waste Generation Scoping Study	
Deliverable	**Due Date**
Task 1: Work Plan, Budget, and Progress Reports	
Work Plan	No later than 20 calendar days after the receipt of the Work Assignment
Bi-weekly communication with the EPA WAM	Ongoing
Monthly Progress Reports	In conformance to the requirements of the contract
Task 2: Identify and Assess Available Data Sources for Industrial Waste Generation and Recovery	
First Draft Memorandum: Analysis of Available Data with Recommendation for a subset of Industrial Wastes for Estimating National Generation and/or Recovery Amounts	TBD through a TD from the EPA WAM
Second Draft Memorandum: Analysis of Available Data with Recommendation for a subset of Industrial Wastes for Estimating National Generation and/or Recovery Amounts	Two weeks after receiving final comments on the first draft from the EPA WAM
Final Memorandum: Analysis of Available Data with Recommendation for a subset of Industrial Wastes for Estimating National Generation and/or Recovery Amounts	Two weeks after receiving final comments on the second draft from the EPA WAM
Task 3: Options & Recommendations for Methodologies to Estimate National Generation Rates for a Subset of Industrial Wastes	
First Draft Memorandum: Options and Recommendations for Methodologies to Estimate National Generation Rates for subset of industrial wastes	TBD through a TD from the EPA WAM
Second Draft Memorandum: Options and Recommendations for Methodologies to Estimate National Generation Rates for subset of industrial wastes	Two weeks after receiving final comments on the first draft from the EPA WAM
Final Memorandum: Options and Recommendations for Methodologies to Estimate National Generation Rates for subset of industrial wastes	Two weeks after receiving final comments on the second draft from the EPA WAM
Task 4: Options & Recommendations for Methodologies to Estimate National Recovery Rates for Select Industrial Wastes	

Industrial Waste Generation Scoping Study	
Deliverable	**Due Date**
First Draft: Options & Recommendations for Methodologies to Estimate National Recovery Rates for subset of industrial wastes	TBD through a TD from the EPA WAM
Second Draft: Options & Recommendations for Methodologies to Estimate National Recovery Rates for subset of industrial wastes	Two weeks after receiving final comments on the first draft from the EPA WAM
Final Draft: Options & Recommendations for Methodologies to Estimate National Recovery Rates for subset of industrial wastes	Two weeks after receiving final comments on the second draft from the EPA WAM
Task 5: Scoping Study Final Report	
Initial Draft Scoping Study Final Report	TBD through a TD from the EPA WAM
Second Draft Scoping Study Final Report	Two weeks after receiving final comments on the initial draft from the EPA WAM
Scoping Study Final Report	Two weeks after receiving final comments on the second draft from the EPA WAM

VI. Other Contractor Requirements

The Contractor shall comply with all applicable requirements of the contract, including compliance with quality-assurance requirements, providing monthly invoices detailing progress and notifying the WAM of the status of remaining funds, and other requirements.

All hard copy and electronic data collected for the purposes of analyses under WA 3-26 and future Amendments shall be shared with the EPA WAM. Similarly, any algorithms, electronic spreadsheets, and/or modeling tools generated by the Contractor, for the purposes of analyses conducted to meet the SOW for WA 3-26 and any future Amendments, shall be shared with the EPA WAM.

List of Appendices

APPENDIX C: MSW Characterization Methodology

MSW CHARACTERIZATION METHODOLOGY

INTRODUCTION

This fact sheet and these data tables are the most recent in a series of reports and data tables sponsored by the U.S. Environmental Protection Agency to characterize municipal solid waste (MSW) in the United States. Together with the previous reports, this fact sheet and data tables provide a historical database for a 46-year characterization (by weight) of the materials and products in MSW. For brevity, the fact sheet and data tables are both implied when data tables are referred to in this methodology.

Management of the nation's municipal solid waste (MSW) continues to be a high priority for communities in the 21st century. The concept of integrated solid waste management—source reduction of wastes before they enter the waste stream, recovery of generated wastes for recycling (including composting), and environmentally sound disposal through combustion facilities and landfills that meet current standards—is being used by communities as they plan for the future.

This methods description provides background on integrated waste management and the 2006 data tables, followed by a brief overview of the methodology. Next is a section on the variety of uses for the information in these data tables. Then, more detail on the methodology is provided.

BACKGROUND

The Solid Waste Management Hierarchy

EPA's 1989 Agenda for Action endorsed the concept of integrated waste management, by which municipal solid waste is reduced or managed through several different practices, which can be tailored to fit a particular community's needs. The components of the hierarchy are:

- Source reduction (or waste prevention), including reuse of products and on-site (or backyard) composting of yard trimmings.

- Recycling, including off-site (or community) composting.

- Combustion with energy recovery.

- Disposal through landfilling or combustion without energy recovery.

As done in previous versions of this report, combustion with energy recovery is shown as discards in the tables and figures.

Overview of the Methodology

Readers should note that this report characterizes the municipal solid waste stream of *the nation as a whole*. Data in this report can be used at the national level. It can also be used to address state, regional, and local situations, where more detailed data are not available or would be too expensive to gather. More detail on uses for this information in this report for both national and local uses is provided later in this chapter.

At the state or local level, recycling rates often are developed by counting and weighing all the recyclables collected, and then aggregating these data to yield a state or local recycling rate. At the national level, we use instead a *materials flow methodology*, which relies heavily on a mass balance approach. Using data gathered from industry associations, key businesses, and similar industry sources, and supported by government data from sources such as the Department of Commerce and the U.S. Census Bureau, we estimate tons of materials and products generated, recycled, or discarded. Other sources of data, such as waste characterizations and surveys performed by governments, industry, or the press, supplement these data.

To estimate MSW generation, production data are adjusted by imports and exports from the United States, where necessary. Allowances are made for the average lifespans of different products. Information on amounts of disposed MSW managed by combustion comes from industry sources as well. MSW not managed by recycling (including composting) or combustion is assumed to be landfilled.

In any estimation of MSW generation, it is important to define what is and is not included in municipal solid waste. EPA includes those materials that historically have been handled in the municipal solid waste stream–those materials from municipal sources, sent to municipal landfills. In this report, MSW includes wastes such as product packaging, newspapers, office and classroom papers, bottles and cans, boxes, wood pallets, food scraps, grass clippings, clothing, furniture, appliances, automobile tires, consumer electronics, and batteries.

A common error in using this report is to assume that *all* nonhazardous wastes are included. As shown later in this methods description, municipal solid waste as defined here does *not* include construction and demolition debris, biosolids (sewage sludges), industrial process wastes, or a number of other wastes that, in some cases, may go to a municipal waste landfill. These materials, over time, have tended to be handled separately and are not included in the totals in these data tables. EPA has addressed several of these materials separately, for instance, in *Biosolids Generation, Use, and Disposal in the United States*, EPA530-R-99-009, September 1999, and *Characterization of Building-Related Construction and Demolition Debris in the United States*, EPA530-R-98-010, May 1998. Recycling (including composting) is encouraged for these materials as well.

In addition, the source of municipal solid waste is important. EPA's figures include municipal solid waste from homes, institutions such as schools and prisons, commercial sources such as restaurants and small businesses, and occasional industrial sources. MSW does not include wastes of other types or from other sources, including automobile bodies, municipal sludges, combustion ash, and industrial process wastes that might also be disposed in municipal waste landfills or combustion units.

HOW THESE DATA TABLES CAN BE USED

Nationwide. The data in this tables provide a nationwide picture of municipal solid waste generation and management. The historical perspective is particularly useful in establishing trends and highlighting the changes that have occurred over the years, both in types of wastes generated and in the ways they are managed. This perspective on MSW and its management is useful in assessing national solid waste management needs and policy. The consistency in methodology and scope aids in the use of the data tables for reporting over time. The data tables are, however, of equal or greater value as a solid waste management planning tool for state and local governments and private firms.

Local or state level. At the local or state level, the data in these data tables can be used to develop approximate (but quick) estimates of MSW generation in a defined area. That is, the data on generation of MSW per person nationally may be used to estimate generation in a city or other local area based on the population in that area. This can be of value when a "ballpark" estimate of MSW generation in an area is needed. For example, communities may use such an estimate to determine the potential viability of regional versus single community solid waste management facilities. This information can help define solid waste management planning areas and the planning needed in those areas. However, for communities making decisions where knowledge of the amount and composition of MSW is crucial, (e.g., where a solid waste management facility is being sited), local estimates of the waste stream should be made.

Another useful feature of these data tables for local planning is the information provided on MSW trends. Changes over time in total MSW generation and the mix of MSW materials can affect the need for and use of various waste management alternatives. Observing trends in MSW generation can help in planning an integrated waste management system that includes facilities sized and designed for years of service.

While the national average data are useful as a checkpoint against local MSW characterization data, any differences between local and national data should be examined carefully. There are many regional variations that require each community to examine its own waste management needs. Such factors as local and regional availability of suitable landfill space, proximity of markets for recovered materials, population density, commercial and industrial activity, and climatic and groundwater variations all may motivate each community to make its own plans.

Specific reasons for regional differences may include:

- Variations in climate and local waste management practices, which greatly influence generation of yard trimmings. For instance, yard trimmings exhibit strong seasonal variations in most regions of the country. Also, the level of backyard composting in a region will affect generation of yard trimmings.

- Differences in the scope of waste streams. That is, a local landfill may be receiving construction and demolition wastes in addition to MSW, but these data tables address MSW only.

- Variance in the per capita generation of some products, such as newspapers and telephone directories, depending upon the average size of the publications. Typically, rural areas will generate less of these products on a per person basis than urban areas.

- Level of commercial activity in a community. This will influence the generation rate of some products, such as office paper, corrugated boxes, wood pallets, and food scraps from restaurants.

- Variations in economic activity, which affect waste generation in both the residential and the commercial sectors.

- Local and state regulations and practices. Deposit laws, bans on landfilling of specific products, and variable rate pricing for waste collection are examples of practices that can influence a local waste stream.

While caution should be used in applying the data in these tables, for some areas, the national breakdown of MSW by material may be the only such data available for use in comparing and planning waste management alternatives. Planning a curbside recycling program, for example, requires an estimate of household recyclables that may be recovered. If resources are not available to adequately estimate these materials by other means, local planners may turn to the national data. This is useful in areas that may have typical MSW generation or in areas where appropriate adjustments in the data can be made to account for local conditions.

In summary, the data in this report can be used in local planning to:

- Develop approximate estimates of total MSW generation in an area.
- Check locally developed MSW data for accuracy and consistency.
- Account for trends in total MSW generation and the generation of individual components.
- Help set goals and measure progress in source reduction and recycling (including composting).

CHARACTERIZATION OF MUNICIPAL SOLID WASTE: IN PERSPECTIVE

The Two Methodologies for Characterizing MSW: Site-Specific Versus Materials Flow

There are two basic approaches to estimating quantities of municipal solid waste at the local, state, or national levels—site-specific and materials flow. These data tables are based on the materials flow approach.

Site-specific studies. In the first methodology, which is site-specific, sampling, sorting, and weighing the individual components of the waste stream could be used. This methodology is useful in defining a local waste stream, especially if large numbers of samples are taken over several seasons. Results of sampling also increase the body of knowledge about variations due to climatic and seasonal changes, population density, regional differences, and the like. In addition, quantities of MSW components such as food scraps and yard trimmings can only be estimated through sampling and weighing studies.

A disadvantage of sampling studies based on a limited number of samples is that they may be skewed and misleading if, for example, atypical circumstances were experienced during the sampling. These circumstances could include an unusually wet or dry season, delivery of some unusual wastes during the sampling period, or errors in the sampling methodology. Any errors of this kind will be greatly magnified when a limited number of samples are taken to represent a community's entire waste stream for a year. Magnification of errors could be even more serious if a limited number of samples was relied upon for making the national estimates of MSW. Also, extensive sampling would be prohibitively expensive for making the national estimates. An additional disadvantage of sampling studies is that they do not provide information about trends unless performed in a consistent manner over a long period of time.

Of course, at the state or local level, sampling may not be necessary—many states and localities count all materials recovered for recycling, and many weigh all wastes being disposed to generate state or local recycling rates from the "ground up." To use these figures at the national level would require all states to perform these studies, and perform them in a consistent manner conducive to developing a national summary, which so far has not been practical.

Materials flow. The second approach to quantifying and characterizing the municipal solid waste stream–the methodology used for this report–utilizes a materials flow approach to estimate the waste stream on a nationwide basis. In the late 1960s and early 1970s, EPA's Office of Solid Waste and its predecessors at the Public Health Service sponsored work that began to develop this methodology. These data tables represent the latest version of this database that has been evolving for over 30 years.

The materials flow methodology is based on production data (by weight) for the materials and products in the waste stream. To estimate generation data, specific adjustments are made to the production data for each material and product category. Adjustments are made for imports and exports and for diversions from MSW (e.g., for building materials made of plastic and paperboard that become construction and demolition debris.) Adjustments are also made for the lifetimes of products. Finally, food scraps, yard trimmings, and a small amount of miscellaneous inorganic wastes are accounted for by compiling data from a variety of waste sampling studies.

One problem with the materials flow methodology is that product residues associated with other items in MSW (usually containers) are not accounted for. These residues would include, for example, food left in a jar, detergent left in a box or bottle, and dried paint in a can. Some household hazardous wastes, (e.g., pesticide left in a can) are also included among these product residues.

Municipal Solid Waste Defined in Greater Detail

As stated earlier, EPA includes those materials that historically have been handled in the municipal solid waste stream–those materials from municipal sources, sent to municipal landfills. In these data tables, MSW includes wastes such as product packaging, newspapers, office and classroom paper, bottles and cans, boxes, wood pallets, food scraps, grass clippings, clothing, furniture, appliances, automobile tires, consumer electronics, and batteries. For purposes of analysis, these products and materials are often grouped in these data tables into the following categories: durable goods, nondurable goods, containers and packaging, food scraps and yard trimmings, and miscellaneous inorganic wastes.

Municipal solid wastes characterized in these data tables come from residential, commercial, institutional, or industrial sources. Some examples of the types of MSW that come from each of the broad categories of sources are:

Sources and Examples	**Example Products**
Residential (single-and multi-family homes)	Newspapers, clothing, disposable tableware, food packaging, cans and bottles, food scraps, yard trimmings
Commercial (office buildings, retail and wholesale establishments, restaurants)	Corrugated boxes, food scraps, office papers, disposable tableware, paper napkins, yard trimmings
Institutional (schools, libraries, hospitals, prisons)	Cafeteria and restroom trash can wastes, office papers, classroom wastes, yard trimmings

Industrial (packaging and administrative; *not* process wastes)		Corrugated boxes, plastic film, wood pallets, lunchroom wastes, office papers.

The materials flow methodology used in these data tables does not readily lend itself to the quantification of wastes according to their sources. For example, corrugated boxes may be unpacked and discarded from residences, commercial establishments such as grocery stores and offices, institutions such as schools, or factories. Similarly, office papers are mostly generated in offices, but they also are generated in residences and institutions. The methodology estimates only the total quantity of products generated, not their places of disposal or recovery for recycling.

Other Subtitle D Wastes

Some people assume that "municipal solid waste" must include everything that is landfilled in Subtitle D landfills. (Subtitle D of the Resource Conservation and Recovery Act deals with wastes other than the hazardous wastes covered under Subtitle C.) As shown in Figure 1, however, RCRA Subtitle D includes many kinds of wastes. It has been common practice to landfill wastes such as municipal sludges, nonhazardous industrial wastes, residue from automobile salvage operations, and construction and demolition debris along with MSW, but these other kinds of wastes are not included in the estimates presented in these data tables.

Figure 1: Municipal Solid Waste in the Universe of Subtitle D Wastes

Subtitle D Wastes	
The Subtitle D Waste included in these data tables is Municipal Solid Waste, which includes:	
Containers and packaging such as soft drink bottles and corrugated boxes Durable goods such as furniture and appliances Nondurable goods such as newspapers, trash bags, and clothing Other wastes such as food scraps and yard trimmings.	
Subtitle D Wastes not included in these data tables are:	
Municipal sludges	Agricultural wastes
Industrial nonhazardous wastes	Oil and gas wastes
Construction and demolition debris	Mining wastes

Figure 1-A: Definition of Terms

The materials flow methodology produces an estimate of total municipal solid waste generation in the United States, by material categories and by product categories.

The term ***generation*** as used in these data tables refers to the weight of materials and products as they enter the waste management system from residential, commercial, institutional, and industrial sources and before materials recovery or combustion takes place. Preconsumer (industrial) scrap is not included in the generation estimates. Source reduction activities (e.g., backyard composting of yard trimmings) take place *ahead of* generation.

Source reduction activities reduce the amount or toxicity of wastes before they enter the municipal solid waste management system. Reuse is a source reduction activity involving the recovery or reapplication of a package, used product, or material in a manner that retains its original form or identity. Reuse of products such as refillable glass bottles, reusable plastic food storage containers, or refurbished wood pallets is considered to be source reduction, not recycling.

Recovery of materials as estimated in these data tables includes products and yard trimmings removed from the waste stream for the purpose of recycling (including composting). For recovered products, recovery equals reported purchases of postconsumer recovered material (e.g., glass cullet, old newspapers) plus net exports (if any) of the material. Thus, recovery of old corrugated containers (OCC) is the sum of OCC purchases by paper mills plus net exports of OCC. If recovery as reported by a data source includes converting or fabrication (preconsumer) scrap, the preconsumer scrap is *not* counted towards the recovery estimates in these data tables. Imported secondary materials are also not counted in recovery estimates in this report. For some materials, additional uses, such as glass used for highway construction or newspapers used to make insulation, are added into the recovery totals.

Combustion of MSW with energy recovery, often called "waste-to-energy," is estimated in these data tables. Combustion of separated materials–wood and rubber from tires–is included in the estimates of combustion with energy recovery in these data tables.

Discards include MSW remaining after recovery for recycling (including composting). These discards presumably would be combusted without energy recovery or landfilled, although some MSW is littered, stored or disposed onsite, or burned onsite, particularly in rural areas. No good estimates for these other disposal practices are available, but the total amounts of MSW involved are presumed to be small.

Materials and Products Not Included in These Estimates

As noted earlier, other Subtitle D wastes (illustrated in Figure 1) are not included in these estimates, even though some may be managed along with MSW (e.g., by combustion or landfilling). Household hazardous wastes, while generated as MSW with other residential wastes, are not identified separately in these data

tables. Transportation parts and equipment (including automobiles and trucks) are not included in the wastes characterized in these data tables.

Certain other materials associated with products in MSW are often not accounted for because the appropriate data series have not yet been developed. These include, for example, inks and other pigments and some additives associated with packaging materials. Considerable additional research would be required to estimate these materials, which constitute a relatively small percentage of the waste stream.

Some adjustments are made in these data tables to account for packaging of imported goods, but there is little available documentation of these amounts.

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EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-26

☐ Other ☒ Amendment Number: 000001

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-W-12-013	04/30/2012 To 04/29/2016	Industrial Materials Scoping
	Base Option Period Number 3	

Contractor: INDUSTRIAL ECONOMICS, INCORPORATED

Specify Section and paragraph of Contract SOW:

Purpose:
- ☐ Work Assignment
- ☒ Work Assignment Amendment
- ☐ Work Plan Approval
- ☐ Work Assignment Close-Out
- ☐ Incremental Funding

Period of Performance: From 09/02/2015 To 04/29/2016

Comments:
The purpose of this amendment is to approve the contractor's work plan/cost estimate dated 09/25/2015 with a Level of Effort, (LOE) of 770 hours and $75,932.88 (b)(4) cost (b)(4) fee). The contractor is not authorize to go over the approved ceiling without the approval from the Contracting Officer.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): 22

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
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4										
5										

Authorized Work Assignment Ceiling

	Cost/Fee:	LOE:
Contract Period: 04/30/2012 To 04/29/2016		770
This Action:		0
Total:		770

Work Plan / Cost Estimate Approvals

	Cost/Fee:	LOE:
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Nicole Villamizar (Signature) (Date)	Branch/Mail Code: Phone Number: 703-347-8952 FAX Number:
Project Officer Name: Shannon Sturgeon (Signature) (Date)	Branch/Mail Code: Phone Number: 703-605-0509 FAX Number: 703-308-7903
Other Agency Official Name: (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Eulvid Rocque (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-8316 FAX Number:

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United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-26

☐ Other ☒ Amendment Number: 000002

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-W-12-013	04/30/2012 To 04/29/2017 Base Option Period Number 3	Indu Waste Mgmt Scoping Study

Contractor: INDUSTRIAL ECONOMICS, INCORPORATED

Specify Section and paragraph of Contract SOW:

Purpose:
- ☐ Work Assignment
- ☒ Work Assignment Amendment
- ☐ Work Plan Approval
- ☐ Work Assignment Close-Out
- ☐ Incremental Funding

Period of Performance: From 09/02/2015 To 04/29/2016

Comments:
The purpose of this amendment is to de-scope 228.2 level of effort $21,134.30 (b)(4) cost (b)(4) fee) from this work assignment by postponing work on tasks 3 and 4. The total LOE for this WA is now 541.8 hours and the total is now $54,798.58 (b)(4) cost (b)(4) fee).

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): 22

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
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Authorized Work Assignment Ceiling

	Contract Period:	Cost/Fee:	LOE:
	04/30/2012 To 04/29/2017		0
This Action:			542
Total:			542

Work Plan / Cost Estimate Approvals

Contractor WP Dated:		Cost/Fee	LOE:
Cumulative Approved:		Cost/Fee	LOE:

Work Assignment Manager Name: Nicole Villamizar (Signature) (Date)	Branch/Mail Code: Phone Number: 703-347-8952 FAX Number:
Project Officer Name: Shannon Sturgeon (Signature) (Date)	Branch/Mail Code: Phone Number: 703-605-0509 FAX Number: 703-308-7903
Other Agency Official Name: (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Eulvid Rocque (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-8316 FAX Number:

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-27

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-W-12-013	04/30/2012 To 04/29/2016	Technical Support CCR SWMP
	Base Option Period Number 3	

Contractor: INDUSTRIAL ECONOMICS, INCORPORATED

Specify Section and paragraph of Contract SOW:

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 07/21/2015 To 04/29/2016

Comments:
The purpose of this amendment is to initiate Work Assignment(WA) 3-27. Craig Dufficy is appointed as the work assignment manager (WAM) and Jesse Miller is appointed as the Alternate WAM. The Level of Effort,(LOE) is in the amount of 451 hours. The statement of work is attached. The contractor shall submit a work plan and cost estimate as it relates to this request.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): 22

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
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5										

Authorized Work Assignment Ceiling

	Cost/Fee:	LOE:
Contract Period: 04/30/2012 To 04/29/2016		0
This Action:		451
Total:		451

Work Plan / Cost Estimate Approvals

	Cost/Fee:	LOE:
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Craig Dufficy (Signature) (Date)	Branch/Mail Code: Phone Number: 703-308-9037 FAX Number:
Project Officer Name: Shannon Sturgeon (Signature) (Date)	Branch/Mail Code: Phone Number: 703-605-0509 FAX Number: 703-308-7903
Other Agency Official Name: (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Eulvid Rocque (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-8316 FAX Number:

EPA Contract No. EP-W-12-013

Statement of Work

Work Assignment No. 3-27

Title: Technical Support for CCR State Solid Waste Management Plans

Work Assignment Manager: Craig Dufficy

Address: Office of Solid Waste and Emergency Response
Materials Recovery and Waste Management Division (MRWMD)
1200 Pennsylvania Ave., NW/Mail Code 5304P
Washington, DC 20460
Phone No. (703) 308-9037

Alternate Work Assignment Manager: Jesse Miller
Phone: (703) 308-1180

Background: EPA finalized national regulations to provide a comprehensive set of requirements for the safe disposal of coal combustion residuals (CCRs), commonly known as coal ash, from coal-fired power plants. The final rule is the culmination of extensive study on the effects of coal ash on the environment and public health. The rule establishes technical requirements for CCR landfills and surface impoundments under subtitle D of the Resource Conservation and Recovery Act (RCRA), the nation's primary law for regulating solid waste. The final rule makes a number of changes from the proposal including providing greater clarity on technical requirements in response to questions received during the comment period.

These regulations address the risks from coal ash disposal -- leaking of contaminants into ground water, blowing of contaminants into the air as dust, and the catastrophic failure of coal ash surface impoundments. Additionally, the rule sets out recordkeeping and reporting requirements as well as the requirement for each facility to establish and post specific information to a publicly-accessible website. This final rule also supports the responsible recycling of CCRs by distinguishing safe, beneficial use from disposal.

The CCR rule is self-implementing and imposes minimum federal requirements directly on facilities. However, this rule will best achieve its protections where states adopt regulations, as necessary, that are at least as stringent as the federal regulations. In addition, states should also revise their Solid Waste Management Plans (SWMPs) to demonstrate how CCR disposal units will be regulated in their state.

EPA is committed to making the process for submittal and approval of SWMPs as streamlined as possible. Consequently, EPA is suggesting that the states, regardless of the status of their SWMP in this regard, focus initially on submitting a plan (or portion thereof) that shows how the

state intends to regulate CCR units. In addition, where new state legislation or regulations are necessary, a state may submit their SWMP before their legislation or regulations are finalized; EPA's approval of the plan would be conditioned on the EPA-reviewed legislation being passed or the regulations being promulgated.

Purpose and Scope

The purpose of this work assignment is to provide assistance to the Regional Offices in conducting technical comparisons between the state's CCR requirements and the federal CCR rule. The state SWMP will also have to be reviewed to ensure that it meets the requirements of 40 CFR part 256.

The work assignment also includes the development of example materials (letters, notifications, web posting language, schedule, any additional checklists, etc.) and process steps based on experience with the first two state SWMP approval pilots.

The work assignment would also provide for assistance with documenting and tracking of technical decisions to ensure consistent approaches across regions.

Work Statement/Cost Estimate

Task 1: Work Plan.
Within 20 days of receipt of this work assignment, the contractor shall deliver a management work plan, including a proposed level of effort, budget, and schedule for all tasks. This task also includes the monthly reporting requirement.
Deliverables: Work plan and monthly reports.

Task 2: Assistance with Reviewing SWMPs
As SWMPs are submitted by the states to the regions, assist the Regions in reviewing the first two plans for completeness, compliance with 40 CFR part 256 SWMP requirements and help conduct a side-by-side comparison, if necessary, of the state regulations and the federal CCR requirements.
Deliverables: Memo summarizing review and documenting decisions.

Task 3: Develop Example Materials
This task includes the development of example materials; such as letters, notifications, web posting language, schedule for review, and any additional checklists needed to assist the regions with the review process of the state SWMPs. These example materials will become clearer after going through the first two state SWMP reviews.
Deliverables: Example Materials

Task 4: Develop a system to document and track decisions

This task includes providing assistance in tracking and documenting decisions. Some of these will be decisions on specific technical requirements of the rule, others will be larger, such as the approval or partial approval of a state plan. This task also includes the development of a spreadsheet to be used for tracking decisions. This system will be used by regions to view what decisions have been made in order to ensure consistent approaches across the regions.
Deliverables: Tracking Spreadsheet

Schedule	**Milestone**
1. Work Plan (Task 1)	20 days after receipt of WA
2. Assistance with Reviewing SWMPS (Task 2)	30 days after receipt of SWMP
3. Develop Example Materials (Task 3)	60 days after completion of task 2
4. Develop a system to document and track decisions (Task 4)	60 days after completion of task 3

Other Contractor Requirements

CONTRACTOR COMMUNICATIONS

Upon approval of the Work Plan, the Contractor shall maintain at least weekly communications with the Work Assignment Manager regarding the status of work on the Work Assignment.

TECHNICAL DIRECTION

The Designated Work Assignment Manager (WAM) on this Work Assignment is authorized to provide technical direction to the extent allowed under EPAAR (1552.237-71) (APR 1984) (DEVIATION). Other than the Designated WAM, only the Project Officer and the Contracting Officer are authorized to provide technical direction.

Technical direction will include:

(1) Direction to the Contractor, if necessary, to assist the Contractor in accomplishing the Statement of Work.

(2) Comments on and approval/acceptance of reports or other deliverables.

Technical direction must be within the contract and the Work Assignment statement of work. The Project Officer and the WAM **do not** have the authority to issue technical direction which (1) institutes additional

work outside the scope of either the contract or this Work Assignment; (2) constitutes a change as defined in the "Changes" clause; (3) causes an increase or decrease in the estimated cost of the contract or Work Assignment; (4) alters the period of performance; or (5) changes any of the other express terms or conditions of the contract or Work Assignment.

Technical direction will be issued in writing or confirmed in writing within five (5) calendar days after oral issuance. The technical direction memorandum will be provided to the Contractor and copies will be forwarded to the Contracting Officer and the Project Officer. If the Contractor has not received written confirmation within five (5) calendar days of an oral issuance, the Contractor must so notify the Project Officer.

Data Collection

In the unlikely event that data collection is necessary, either directly from measurements, produced from models, or derived from other sources such as web searches, data bases, or literature produced from the state about their SWMP, then the contractor shall comply with all requirements delineated in EPA Orde 5360.1A2r, EPA Manual 5360.A1, and OSWER's and OSW's Quality Management Plans, available from QA Coordinators. See also EPA Website: http://www.epa.gov/quality/qa_docs.html. If direct measurement is required the contractor shall prepare a Quality Assurance Project Plan (QAPP), written to address applicable sections of EPA requirements for QA Project Plans, EPA QA/R-5, December 2002, as required in the contract. The submittal of the QAPP and the review by the appropriate QA Coordinator will occur prior to any direct sampling or measurement.

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-27

☐ Other ☒ Amendment Number: 000001

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-W-12-013	04/30/2012 To 04/29/2016 Base Option Period Number 3	Tech supt for CCR SWMP

Contractor: INDUSTRIAL ECONOMICS, INCORPORATED

Specify Section and paragraph of Contract SOW:

Purpose:
- ☐ Work Assignment
- ☒ Work Assignment Amendment
- ☐ Work Plan Approval
- ☐ Work Assignment Close-Out
- ☐ Incremental Funding

Period of Performance: From 07/21/2015 To 04/29/2016

Comments:
The purpose of this amendment is to approve and accept the contractor's work plan/cost estimate dated 08/06/15 with a Level of Effort (LOE) of 451 hours and $44,698.05 (b)(4) cost (b)(4) fee). The contractor is not authorized to go over the approved cost ceiling of $44,698.05 without the approval from the contracting officer.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): 22

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
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Authorized Work Assignment Ceiling

	Cost/Fee:	LOE:
Contract Period: 04/30/2012 To 04/29/2016		451
This Action:		0
Total:		451

Work Plan / Cost Estimate Approvals

	Cost/Fee:	LOE:
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Craig Dufficy (Signature) (Date)	Branch/Mail Code: Phone Number: 703-308-9037 FAX Number:
Project Officer Name: Shannon Sturgeon (Signature) (Date)	Branch/Mail Code: Phone Number: 703-605-0509 FAX Number: 703-308-7903
Other Agency Official Name: (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Eulvid Rocque (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-8316 FAX Number:

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-28

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-W-12-013	04/30/2012 To 04/29/2016 Base Option Period Number 3	Integrated Systems in Communit

Contractor: INDUSTRIAL ECONOMICS, INCORPORATED

Specify Section and paragraph of Contract SOW:

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 01/12/2016 To 04/29/2016

Comments:
This is to initiate WA 3-28 entitled"Integrated Systems in Community Cases (Waste,Water,Land & Transportation):Implementation of the Triple Value (3V)Systems Approach to Sustainability".Marilyn Ten Brink is appointed as the work assignment manager(WAM).The level of effort is 1500 hours.The statement of

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): 22

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
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Authorized Work Assignment Ceiling

	Cost/Fee:	LOE:
Contract Period: 04/30/2012 To 04/29/2016		0
This Action:		1,500
Total:		1,500

Work Plan / Cost Estimate Approvals

Contractor WP Dated:	Cost/Fee	LOE:
Cumulative Approved:	Cost/Fee	LOE:

Work Assignment Manager Name: Marilyn Tenbrink (Signature) (Date)	Branch/Mail Code: Phone Number: 401-782-3078 FAX Number:
Project Officer Name: Shannon Sturgeon (Signature) (Date)	Branch/Mail Code: Phone Number: 703-605-0509 FAX Number: 703-308-7903
Other Agency Official Name: (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Eulvid Rocque (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-8316 FAX Number:

EPA CONTRACT NUMBER EP-W-12-013
STATEMENT OF WORK

Work Assignment Number: 3-28

Work Assignment Amendment Number: 0

Title: ***Integrated Systems in Community Cases (Waste, Water, Land, and Transportation): Implementation of the Triple Value (3V) Systems Approach to Sustainability***

Work Assignment Manager (WAM): **Marilyn ten Brink**

Address: ORD/NHEERL/AED
27 Tarzwell Dr
Narragansett RI. 02882

Contact: tenbrink.marilyn@epa.gov
(401) 782-3078
AWL (508) 548-5092

BACKGROUND:

The U.S. Environmental Protection Agency ("EPA" or "the Agency") supports the implementation of Sustainability Methods and Practices across the Agency and States, Tribes, Municipalities and citizens that it serves. As part of this, ORD and Program and Regional partners have implemented a Triple Value (3V) Systems Framework and the Triple Value Simulation (3VS) Modeling method to operationalize Sustainability in the context of US Communities, Regional Programs, and place-based policy and decision making. These methods were piloted through collaborative ORD, Region, and community research and are now being expanded in scope and application to include issues such as Waste, Transportation, and Land Revitalization and to be transferred from Pilot cases to other Municipal and Regional cases. Contract support is needed to customize the training, concept mapping, and model application for specific places and in addressing complex social, economic, and environmental needs. Specific place- based applications may be framed to address one or more of the following issues: Integrated Waste management, Regulatory Compliance, Water/Energy Nexus, Transportation, Climate Adaptation/Resilience, integrated Watershed Management, Human well-being, Food Security, Sustainable Resource Management, and ecosystem services sustainability.

The work requested here will result in the development and dissemination of methods, models,tools, training materials, and guidance that directly contributes to Agency planning and supporting analysis for implementing Sustainability goals of the EPA Strategic Plan and the Administrator's Priorities and Cross Cutting Strategies. The Implementation under this Call Order for Specific Cases will provide products specific to needs of each Municipal Case indicated, and the interactions (stakeholder outreach and meetings) with intended users will provide both training and guidance for uses and applications to assist decision-makers in evaluating intervention options.

Contract support is needed to provide analysis and information relevant for Sustainability system and policy

scenarios, convene stakeholder meetings, access experts, and to collect and evaluate the available data, and provide methods training. The model implementation and supporting document produced by the contractor will be grounded in EPA's operational framework for Sustainability, will build on existing methods and documents, and will inform Agency planning for Improved Decision-Making Strategies for municipal and Regional Sustainability.

PURPOSE:

EPA ORD has developed Systems Thinking and Systems modeling trainings, Roadmaps, and Methods. The purpose of this Work Assignment is to obtain the necessary technical support to expand the scope and application of the Triple Value Simulation Modeling approach to implementing Sustainability such that it comprehensively includes integrated materials management and land revitalization in a variety of municipal and watershed cases.. Each tasks in this Call Order is to further implement one or more aspects of a Municipal Case Application. The work requested here operationalizes the methods that EPA ORD has developed for enhancing Integrated Systems approaches to Sustainability, Policy exploration and municipal decision making; while applying 3V methods in a participatory modeling manner to Implement Sustainability. Work is requested here to further develop 3V methods and application in each stated case (each Task corresponds to one specific Case). All work shall be conducted in compliance with EPA Quality Assurance requirements for use of secondary data and modeling.

I. SCOPE OF WORK

The scope of this Work Assignment is comprised of the following tasks. Specifics of work done under Tasks within this work assignment may be provided through Technical Directives (TDs), which will be submitted by the WAM. Work shall be based on, but not duplicate, work completed by IEc under previous 3VS modeling Regional Pilots, Cases, and Implementations.

The contractor shall conduct the following tasks to accomplish the objective of this project.

II. Tasks 1-10

Table 1. List of Tasks and Task Titles

Task 1: Workplan and Budget
Task 2: Durham Light Rail and Denver MVD Integrated Systems
Task 3: User Interface Development
Task 4: Community Integrated Waste management
Task 5: Innovations in Integration and Transferability
Task 6: Urban Forestry Systems Integration
Task 7: Integrated Climate Resilience for Municipalities
Task 8: New England Coastal Watersheds
Task 9: Vulnerable Regions 3VS
Task 10: Systems Training

Task 1: Workplan

1-1 DEVELOP WORKPLAN AND BUDGET

No later than 20 calendar days after the receipt of the work assignment, the contractor shall prepare and deliver a work plan. This plan shall include 1) The level of effort for each of the tasks, 2) A proposed budget including other direct costs, 3) A schedule for providing deliverables, 4) Key staff working on this work assignment, 5) How each task will be performed and 6) how Quality Assurance will be managed and documented. The work plan shall also identify any potential conflict(s) of interests and shall build on but not replicate work done previously for EPA under this or other contracts.

In developing the Work Plan, the contractor shall make all best efforts to adhere to the schedule of deliverables below. Upon approval of the Work Plan, the contractor shall maintain bi-weekly communication with the Work Assignment Manager or assigned Technical Expert. The contractor may also call the WAM for clarification on any Work Plan issues. Additional task specifics will be provided be under Technical Direction. The contractor shall prepare monthly technical and financial progress report in conformance to the requirement of the contract.

Task 2: Durham Light Rail and Denver MVD Integrated Systems

2-1 MODIFY FINAL DURHAM LIGHT RAIL REPORT

The contractor will modify the final report on the Durham Light Rail (developed under a previous contract) to specifically highlight the Waste and Materials Management aspects of the 3VS Municipal Durham model. Participation in conference calls may be necessary to address systems uncertainty specific to this Implementation.

2-2 PARTICIPATE IN IMPLEMENTATION CONFERENCE CALLS AND MEETINGS.

The contractor will participate in conference calls with the COR and key Agency staff to exchange information needed to implement this Case. This will include a discussion of activities, progress, priorities, and adjustments of the model and implementation process to new information as it becomes available. The contractor will prepare meeting materials and engage in communications with Case participants using best Participatory Modeling and Collaboration practices to insure that Case implementation is be successful.

2-3 PARTICIPATE IN STAKEHOLDER AND USE-CASE MEETINGS

The contractor will participate in stakeholder and user meetings to inform and refine the Implementation of the 3VS Denver MVD Case.

2-4 CONSTRUCT 3VS SCOPING MODEL

The contractor will complete construction of a 3VS Scoping model that demonstrates transferability of Durham case to another municipality, aka Sun Valley/ Denver MVD. This model will be modified through discussion with stakeholders. Implementation into Phase I modeling will be under technical direction by EPA.

Task 3: User Interface Development

3-1 DEVELOP GENERIC USER INTERFACE STRUCTURES

The contractor will collaborate with EPA/ORD to develop simplified user-interface development methods. Work will result in means to construct user interfaces efficiently and modularly.

3-2 DEVELOP DURHAM LIGHT RAIL USER INTERFACE

The contractor will complete construction of a User Interface for the existing Durham Light Rail 3VS Model that is appropriate for the needs of the stakeholders and users identified for the Durham Light Rail Case. The contractor should seek user-feedback during development and train the intended users in its operation. The contractor will consult with the COR and with EPA ORD project participants on design aspects of the interface.

3-3 DEVELOP USER INTERFACE for WASTE and MATERIALS MANAGEMENT SPECIFIC USES

The contractor will develop a prototype User Interface for the Denver (Make a Visible Difference Community) Municipal Transfer Pilot that is useful for exploring policy scenarios that include waste, materials management, transportation, and land revitalization options at municipal scale in a Regional context.

Task 4: Community Integrated Waste management

4-1 CONSTRUCT 3VS SCOPING MODEL for a MUNICIPAL INTEGRATED WASTE MANAGEMENT CASE.

The contractor will complete construction of sequential phases of the scoping and quantitative 3VS model for New Bedford, or an alternate medium sized municipality. Selection of the specific prototype municipality shall be based on evaluation of existing data, documents, and frameworks. Transferable sector modules shall be utilized from Durham and from Regional Cases when feasible.

4-2 DEVELOP A GENERIC 3VS SCOPING MODEL FOR SUSTAINABLE MATERIALS MANAGEMENT

The contractor will produce one or more detailed conceptual model(s) that incorporates materials management options, measurable indicators, triple value benefits, and existing regulatory policies. The scope and scale will be determined through discussion with EPA Regional and Program partners to select for specific high priority users.

Task 5: Innovations in Integration and Transferability

5-1 PRODUCE USER-FRIENDLY DOCUMENTS FOR IMPLEMENTATION OF 3VS METHODS

The contractor will produce documents appropriate for training and publication to assist EPA and its partners in 1) the `implementation of 3VS Scoping Models, 2) 3VS Modeling projects, 3) transferability of model threads (systems components) to new cases, and 4) data identification.

Task 6: Urban Forestry Systems Integration

6-1 DEVELOP AN URBAN FORESTRY 3VS CONCEPTUAL MODEL.

The contractor will use STEW-MAP, an existing US Forest Service (USFS) Urban Mapping and Stewardship tool, as input for a generic Urban Forestry 3VS Conceptual Model. Health Indicators and Ecosystem Services Indicators should be included to show benefits of Urban Forestry and Green Infrastructure policies. Relationships and Indicators that have been identified in Regional Case Studies should be included where appropriate.

6-2 3VS FEDERAL PARTNERS DATA INTEGRATION

The contractor will identify and develop smooth data access and transfer between 3VS applications and other existing spatial data sources/tools. The data may be available at high resolution or at low resolution (the scale), and may be local or national in scope. The contractor will participate in collaborations of 3VS team members and Federal Partners (e.g. EPA Regional GIS teams, the US Department of Interior and its Agencies (e.g., USFS, USFW, USGS), the EPA EnviroAtlas, and NOAA) in order to identify existing information.

Task 7: Integrated Climate Resilience for Municipalities

7-1 INTEGRATE CLIMATE RESILIENCE GOALS IN 3VS CASE MODELS

The contractor will prepare a list of Climate Resilience Goals, using existing EPA and Federal Climate documents, that can be incorporated into Municipal 3VS Models, and identify the benefits, relationships, indicators, interventions, policies, and data availability that could be expressed in a 3VS Municipal case that included Climate Resilience in its Problem Statement.

7-2 IMPLEMENT CLIMATE RESILEINCE 3VS CASE(s)

The contractor will include climate resilience components in one or more 3VS implementation cases, including discussion with stakeholders about priorities and tradeoffs.

Task 8: New England Coastal Watersheds

8-1 CAPE COD 3VS REGIONAL MODEL

The contractor will develop a full Cape Cod Regional 3VS Model that addresses Nutrient management, climate resilience, and community well-being goals. The Cape Cod 3VS scoping model and stakeholder discussions (existing) provide a basis for development of the full Cape Cod Regional Model.

8-2 NARRAGANSETT BAY WATERSHED 3VS MODEL

The contractor will participate in stakeholder use-case testing of the Narragansett Bay Watershed 3VS model (existing) and modify the user-interface and model options in response to this use testing. Further details will be provided under Technical Direction as the reviews and user test returns become available.

8-3 SUFFOLK COUNTY, NEW YORK, 3VS MODEL

The contractor will complete the Suffolk County Nutrient Management 3VS Scoping Model and draft documentation. This will be presented to stakeholders and partners, for feedback, modification, and determination whether to proceed to a full quantitative model.

Task 9: Vulnerable Regions 3VS

9-1 DELMARVA, MD REGIONAL 3VS MODEL

The contractor will complete the DELMARVA 3VS Model and begin drafting documentation. The model, data status, and uses will be presented to the project core team, stakeholders and partners iteratively during the duration of the project for feedback and modification.

9-2 ABERDEEN PROVING GROUND 3VS MODEL

The contractor will complete the Aberdeen Proving Ground Net Zero 3VS Scoping Model and begin drafting documentation. The model, data status, and uses will be presented to the project core team, stakeholders and partners iteratively during the duration of the project for feedback and modification.

9-3 WATER, AGRICULTURE, AND CULTURAL 3VS SCOPING

The contractor will assist EPA in developing options for 3VS Cases that address drought, water flow for agriculture, water availability for natural resource protection, protection of cultural resources (e.g., fisheries), water quality, and climate impacts on water availability. This may include stakeholder training, development of conceptual models, identification of priority management options, or other specifics. The contractor will assist in community/stakeholder problem formulation exercises (e.g., with Regions, tribes or NGOs).

Task 10: Systems Training

10-1 TRAINING MATERIALS AND DELIVERY

The contractor will produce audio-visual and written training materials for use by EPA in training EPA Regional staff and Community Stakeholders in the concepts of Sustainability, Systems Thinking , Triple Value Modeling methods, and use of 3VS Models. The contractor may be asked to deliver training materials at meetings.

Travel will be required for implementation of each case as specified. Associated per diem, transportation, and flight costs will differ for each Task in concordance with Case location and staffing provided by the contractor. Day trips will be needed for participation in Stakeholder Meetings located in Region 1 (e.g., Task 8 and 10) and overnight travel may be necessary for those in Regions 2 and 3 (e.g., Tasks 9, 7), Regions 4 and 8 (Task 2), and Region 10 (e.g., tasks 5 and 9). Overseas travel may be needed for subcontractor expert to participate in selected meetings.

The contractor may utilize subcontractors in the performance of the requested work.

The WAM or assigned Technical Expert will review and provide comments on deliverables, including input from Task leads. Revisions to deliverables are due no later than 20 calendar days after the receipt of comments from the WAM.

III. Schedule of Deliverables

Listed below is a description of the deliverables and milestones to be completed under this work assignment.

TASK and DELIVERABLES		Desired Due Date
Task 1.	Workplan	
	WA Workplan and Budget	20 days post receipt
Task 2.	Durham Light Rail and Denver MVD Integrated Systems	
	Outreach and training supporting Durham Light Rail Report	Feb 15 2016
	EPA-IEc team meetings: presentation materials & minutes	monthly
	Conceptual Model for MVD Integrated system	Feb 15 2016
	Report on Sector Transferability and New data needs	Mar 1 2016
	Stakeholder Meeting	March 15 2016
Task 3.	User Interface Development	
	Meeting with Vensim Interface Development team	Feb 1 2016
	User Interface v1 (Durham Community Light Rail)	Feb 30 2016
	User Interface v2 Concept (Integrated Systems Community)	April 1 2016
Task 4.	Community Integrated Waste management	
	Conceptual 3VS Model, convering inclusion of Integrated Waste/Materials Management at a Municiple Scale Urban	Mar 1 2016
Task 5.	Innovations in Integration and Transferability	
	EPA-IEc team meetings: presentation materials & minutes	monthly
	Draft Report on 3VS Sector Integration (waste, water, air, land, transportation, build environment, energy, health) covering Sustainability Spheres of Economy, Society, and Environment	April 1 2016
Task 6.	Urban Forestry Systems Integration	

	Conceptual Model, convering inclusion of Urban Forestry in Brownfields, Waste, Water, and Land Municiple Sustainability 3VS Systems	April 1 2016
Task 7.	Integrated Climate Resilience for Municipalities	
	Status Report for Integration of Climate Resilience stress in Integrated Municiple 3VS Systems Cases	April 1 2016
Task 8.	New Enland Coastal Watersheds	
	EPA-IEc team meetings: presentation materials & minutes	monthly
	Status Report for New England Coastal Watershed Regional cases and Municipal Implementaion within each case	April 1 2015
Task 9.	Vulnerable Regions 3VS	
	EPA-IEc team meetings: presentation materials & minutes	monthly
	DelMarva Status Report	April 1 2016
Task 10.	Systems Training	
	Training Plan and electronic copies of Training Materials	April 1 2016

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-28

☐ Other ☒ Amendment Number: 000001

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-W-12-013	04/30/2012 To 04/29/2016 Base Option Period Number 3	Integrated Systems in Communit

Contractor: INDUSTRIAL ECONOMICS, INCORPORATED

Specify Section and paragraph of Contract SOW:

Purpose:
- ☐ Work Assignment
- ☒ Work Assignment Amendment
- ☐ Work Plan Approval
- ☐ Work Assignment Close-Out
- ☐ Incremental Funding

Period of Performance: From 01/12/2016 To 04/29/2016

Comments:
The purpose of this amendment is to modify the work assignment for a reduced scope dated Feb 18, 2016. This reduced scope is for a Level of Effort of 880 hours. The statement of work is attached. The contractor shall submit a work plan and cost estimate per this request.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): 22

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Contract Period:	Cost/Fee:	LOE:
	04/30/2012 To 04/29/2016		1,500
This Action:			-620
Total:			880

Work Plan / Cost Estimate Approvals

Contractor WP Dated:		Cost/Fee	LOE:
Cumulative Approved:		Cost/Fee	LOE:

Work Assignment Manager Name: Marilyn Tenbrink (Signature) (Date)	Branch/Mail Code: Phone Number: 401-782-3078 FAX Number:
Project Officer Name: Shannon Sturgeon (Signature) (Date)	Branch/Mail Code: Phone Number: 703-605-0509 FAX Number: 703-308-7903
Other Agency Official Name: (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Eulvid Rocque (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-8316 FAX Number:

EPA CONTRACT NUMBER EP-W-12-013
STATEMENT OF WORK

Work Assignment Number: 3-28

Work Assignment Amendment Number: 1

Title: ***Integrated Systems in Community Cases (Waste, Water, Land, and Transportation): Implementation of the Triple Value (3V) Systems Approach to Sustainability***

Work Assignment Manager (WAM): **Marilyn ten Brink**

Address: ORD/NHEERL/AED
27 Tarzwell Dr
Narragansett RI. 02882

Contact: tenbrink.marilyn@epa.gov
(401) 782-3078
AWL (508) 548-5092

BACKGROUND:

The U.S. Environmental Protection Agency ("EPA" or "the Agency") supports the implementation of Sustainability Methods and Practices across the Agency and States, Tribes, Municipalities and citizens that it serves. As part of this, ORD and Program and Regional partners have implemented a Triple Value (3V) Systems Framework and the Triple Value Simulation (3VS) Modeling method to operationalize Sustainability in the context of US Communities, Regional Programs, and place-based policy and decision making. These methods were piloted through collaborative ORD, Region, and community research and are now being expanded in scope and application to include issues such as Waste, Transportation, and Land Revitalization and to be transferred from Pilot cases to other Municipal and Regional cases. Contract support is needed to customize the training, concept mapping, and model application for specific places and in addressing complex social, economic, and environmental needs. Specific place- based applications may be framed to address one or more of the following issues: Integrated Waste management, Regulatory Compliance, Water/Energy Nexus, Transportation, Climate Adaptation/Resilience, integrated Watershed Management, Human well-being, Food Security, Sustainable Resource Management, and ecosystem services sustainability.

The work requested here will result in the development and dissemination of methods, models,tools, training materials, and guidance that directly contributes to Agency planning and supporting analysis for implementing Sustainability goals of the EPA Strategic Plan and the Administrator's Priorities and Cross Cutting Strategies. The Implementation under this Call Order for Specific Cases will provide products specific to needs of each Municipal Case indicated, and the interactions (stakeholder outreach and meetings) with intended users will provide both training and guidance for uses and applications to assist decision-makers in evaluating intervention options.

Contract support is needed to provide analysis and information relevant for Sustainability system and policy

scenarios, convene stakeholder meetings, access experts, and to collect and evaluate the available data, and provide methods training. The model implementation and supporting document produced by the contractor will be grounded in EPA's operational framework for Sustainability, will build on existing methods and documents, and will inform Agency planning for Improved Decision-Making Strategies for municipal and Regional Sustainability.

PURPOSE:

EPA ORD has developed Systems Thinking and Systems modeling trainings, Roadmaps, and Methods. The purpose of this Work Assignment is to obtain the necessary technical support to expand the scope and application of the Triple Value Simulation Modeling approach to implementing Sustainability such that it comprehensively includes integrated materials management and land revitalization in a variety of municipal and watershed cases.. Each tasks in this Call Order is to further implement one or more aspects of a Municipal Case Application. The work requested here operationalizes the methods that EPA ORD has developed for enhancing Integrated Systems approaches to Sustainability, Policy exploration and municipal decision making; while applying 3V methods in a participatory modeling manner to Implement Sustainability. Work is requested here to further develop 3V methods and application in each stated case (each Task corresponds to one specific Case). All work shall be conducted in compliance with EPA Quality Assurance requirements for use of secondary data and modeling.

I. SCOPE OF WORK

The scope of this Work Assignment is comprised of the following tasks. Specifics of work done under Tasks within this work assignment may be provided through Technical Directives (TDs), which will be submitted by the WAM. Work shall be based on, but not duplicate, work completed by IEc under previous 3VS modeling Regional Pilots, Cases, and Implementations.

The contractor shall conduct the following tasks to accomplish the objective of this project.

II. Tasks 1-10

Table 1. List of Tasks and Task Titles

Task 1: Workplan and Budget
Task 2: Durham Light Rail and Denver MVD Integrated Systems
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Task 6: Urban Forestry Systems Integration
Task 7: Integrated Climate Resilience for Municipalities
Task 8: New England Coastal Watersheds
Task 9: Vulnerable Regions 3VS
Task 10: Systems Training

Task 1: Workplan

1-1 DEVELOP WORKPLAN AND BUDGET

No later than 20 calendar days after the receipt of the work assignment, the contractor shall prepare and deliver a work plan. This plan shall include 1) The level of effort for each of the tasks, 2) A proposed budget including other direct costs, 3) A schedule for providing deliverables, 4) Key staff working on this work assignment, 5) How each task will be performed and 6) how Quality Assurance will be managed and documented. The work plan shall also identify any potential conflict(s) of interests and shall build on but not replicate work done previously for EPA under this or other contracts.

In developing the Work Plan, the contractor shall make all best efforts to adhere to the schedule of deliverables below. Upon approval of the Work Plan, the contractor shall maintain bi-weekly communication with the Work Assignment Manager or assigned Technical Expert. The contractor may also call the WAM for clarification on any Work Plan issues. Additional task specifics will be provided be under Technical Direction. The contractor shall prepare monthly technical and financial progress report in conformance to the requirement of the contract.

Task 2: Durham Light Rail and Denver MVD Integrated Systems

2-1 MODIFY FINAL DURHAM LIGHT RAIL REPORT

The contractor will modify the final report on the Durham Light Rail (developed under a previous contract) to specifically highlight the Waste and Materials Management aspects of the 3VS Municipal Durham model. Participation in conference calls may be necessary to address systems uncertainty specific to this Implementation.

2-2 PARTICIPATE IN IMPLEMENTATION CONFERENCE CALLS AND MEETINGS.

The contractor will participate in conference calls with the COR and key Agency staff to exchange information needed to implement this Case. This will include a discussion of activities, progress, priorities, and adjustments of the model and implementation process to new information as it becomes available. The contractor will prepare meeting materials and engage in communications with Case participants using best Participatory Modeling and Collaboration practices to insure that Case implementation is be successful.

2-3 PARTICIPATE IN STAKEHOLDER AND USE-CASE MEETINGS

The contractor will participate in stakeholder and user meetings to inform and refine the Implementation of the 3VS Denver MVD Case.

2-4 CONSTRUCT 3VS SCOPING MODEL

The contractor will complete construction of a 3VS Scoping model that demonstrates transferability of Durham case to another municipality, aka Sun Valley/ Denver MVD. This model will be modified through discussion with stakeholders. Implementation into Phase I modeling will be under technical direction by EPA.

Task 3: User Interface Development

3-1 DEVELOP GENERIC USER INTERFACE STRUCTURES

The contractor will collaborate with EPA/ORD to develop simplified user-interface development methods. Work will result in means to construct user interfaces efficiently and modularly.

3-2 DEVELOP DURHAM LIGHT RAIL USER INTERFACE

The contractor will complete construction of a User Interface for the existing Durham Light Rail 3VS Model that is appropriate for the needs of the stakeholders and users identified for the Durham Light Rail Case. The contractor should seek user-feedback during development and train the intended users in its operation. The contractor will consult with the COR and with EPA ORD project participants on design aspects of the interface.

3-3 DEVELOP USER INTERFACE for WASTE and MATERIALS MANAGEMENT SPECIFIC USES

The contractor will develop a prototype User Interface for the Denver (Make a Visible Difference Community) Municipal Transfer Pilot that is useful for exploring policy scenarios that include waste, materials management, transportation, and land revitalization options at municipal scale in a Regional context.

Task 4: Community Integrated Waste management

4-1 CONSTRUCT 3VS SCOPING MODEL for a MUNICIPAL INTEGRATED WASTE MANAGEMENT CASE.

The contractor will complete construction of sequential phases of the scoping and quantitative 3VS model for New Bedford, or an alternate medium sized municipality. Selection of the specific prototype municipality shall be based on evaluation of existing data, documents, and frameworks. Transferable sector modules shall be utilized from Durham and from Regional Cases when feasible.

4-2 DEVELOP A GENERIC 3VS SCOPING MODEL FOR SUSTAINABLE MATERIALS MANAGEMENT

The contractor will produce one or more detailed conceptual model(s) that incorporates materials management options, measurable indicators, triple value benefits, and existing regulatory policies. The scope and scale will be determined through discussion with EPA Regional and Program partners to select for specific high priority users.

Task 5: Innovations in Integration and Transferability

5-1 PRODUCE USER-FRIENDLY DOCUMENTS FOR IMPLEMENTATION OF 3VS METHODS

The contractor will produce documents appropriate for training and publication to assist EPA and its partners in 1) the `implementation of 3VS Scoping Models, 2) 3VS Modeling projects, 3) transferability of model threads (systems components) to new cases, and 4) data identification.

Task 6: Urban Forestry Systems Integration

6-1 DEVELOP AN URBAN FORESTRY 3VS CONCEPTUAL MODEL.

The contractor will participate in one conference call to plan future use of STEW-MAP, an existing US Forest Service (USFS) Urban Mapping and Stewardship tool, as input for a generic Urban Forestry 3VS Conceptual Model. It is anticipated that Health Indicators and Ecosystem Services Indicators will be

included to show benefits of Urban Forestry and Green Infrastructure policies and that relationships and Indicators that have been identified in Regional Case Studies should be included where appropriate.

6-2 3VS FEDERAL PARTNERS DATA INTEGRATION

No work is anticipated for this subtask during this POP.

Task 7: Integrated Climate Resilience for Municipalities

7-1 INTEGRATE CLIMATE RESILIENCE GOALS IN 3VS CASE MODELS

No work is anticipated for this subtask during this POP.

7-2 IMPLEMENT CLIMATE RESILEINCE 3VS CASE(s)

No work is anticipated for this subtask during this POP

Task 8: New England Coastal Watersheds

8-1 CAPE COD 3VS REGIONAL MODEL

The contractor will develop a full Cape Cod Regional 3VS Model that addresses Nutrient management, climate resilience, and community well-being goals. The Cape Cod 3VS scoping model and stakeholder discussions (existing) provide a basis for development of the full Cape Cod Regional Model.

8-2 NARRAGANSETT BAY WATERSHED 3VS MODEL

The contractor will participate in stakeholder use-case testing of the Narragansett Bay Watershed 3VS model (existing) and modify the user-interface and model options in response to this use testing. Further details will be provided under Technical Direction as the reviews and user test returns become available.

8-3 SUFFOLK COUNTY, NEW YORK, 3VS MODEL

The contractor will complete the Draft Suffolk County Nutrient Management 3VS Scoping Model and Draft documentation. This will be presented to stakeholders and partners, for feedback, modification, and determination whether to proceed to a full quantitative model.

Task 9: Vulnerable Regions 3VS

9-1 DELMARVA, MD REGIONAL 3VS MODEL

The contractor will prepare the DELMARVA 3VS Scoping Model and data for Quantitative Modeling, and begin drafting supporting documentation. The model, data status, and uses will be presented to the project core team, stakeholders and partners iteratively during the duration of the project for feedback and modification.

9-2 ABERDEEN PROVING GROUND 3VS MODEL

The contractor will complete the Aberdeen Proving Ground Net Zero 3VS Scoping Model and begin drafting documentation. The model, data status, and uses will be presented to the project core team, stakeholders and partners iteratively during the duration of the project for feedback and modification.

9-3 WATER, AGRICULTURE, AND CULTURAL 3VS SCOPING

The contractor will assist EPA in developing options for 3VS Cases that address drought, water flow for agriculture, water availability for natural resource protection, protection of cultural resources (e.g., fisheries), water quality, and climate impacts on water availability. This may include planning for future stakeholder training, development of conceptual models, identification of priority management options, or other specifics. The contractor will assist in community/stakeholder problem formulation exercises (e.g., with Regions, tribes or NGOs).

Task 10: Systems Training

10-1 TRAINING MATERIALS AND DELIVERY

The contractor will produce audio-visual and written training materials for use by EPA in training EPA Regional staff and Community Stakeholders in the concepts of Sustainability, Systems Thinking , Triple Value Modeling methods, and use of 3VS Models. The contractor may be asked to deliver training materials at meetings.

Travel will be required for implementation of each case as specified. Associated per diem, transportation, and flight costs will differ for each Task in concordance with Case location and staffing provided by the contractor. Day trips will be needed for participation in Stakeholder Meetings located in Region 1 (e.g., Task 8 and 10) and overnight travel may be necessary for those in Regions 2 and 3 (e.g., Tasks 9, 7), Regions 4 and 8 (Task 2), and Region 10 (e.g., tasks 5 and 9). Overseas travel may be needed for subcontractor expert to participate in selected meetings.

The contractor may utilize subcontractors in the performance of the requested work.

The WAM or assigned Technical Expert will review and provide comments on deliverables, including input from Task leads. Revisions to deliverables are due no later than 20 calendar days after the receipt of comments from the WAM.

III. Schedule of Deliverables

Listed below is a description of the deliverables and milestones to be completed under this work assignment.

TASK and DELIVERABLES		Desired Due Date
Task 1.	Workplan	
	WA Workplan and Budget	20 days post receipt
Task 2.	Durham Light Rail and Denver MVD Integrated Systems	
	Outreach and training supporting Durham Light Rail Report	Mar 15 2016

	EPA-IEc team meetings: presentation materials & minutes	monthly
	Report on Sector Transferability and New data needs	Mar 1 2016
	Stakeholder Meeting	March 15 2016
Task 3.	User Interface Development	
	Meeting with Vensim Interface Development team	Feb 1 2016
	User Interface v1 (Durham Community Light Rail)	Mar 20 2016
	User Interface v2 Concept (Integrated Systems Community)	April 1 2016
Task 4.	Community Integrated Waste management	
	Conceptual 3VS Model, covering inclusion of Integrated Waste/Materials Management at a Municipal/Urban Scale	Mar 15 2016
Task 5.	Innovations in Integration and Transferability	
	EPA-IEc team meetings: presentation materials & minutes	monthly
	Draft Report on 3VS Sector Integration (waste, water, air, land, transportation, build environment, energy, health) covering Sustainability Spheres of Economy, Society, and Environment	April 1 2016
Task 6.	Urban Forestry Systems Integration	
	Participation in one conference call	April 1 2016
Task 7.	Integrated Climate Resilience for Municipalities	
	No Deliverables in this POP for this task	NA
Task 8.	New England Coastal Watersheds	
	EPA-IEc team meetings: presentation materials & minutes	monthly
	Status Report for New England Coastal Watershed Regional cases and Municipal Implementation within each case	April 1 2015
Task 9.	Vulnerable Regions 3VS	
	EPA-IEc team meetings: presentation materials & minutes	monthly
	DelMarva Status Report	April 1 2016
Task 10.	Systems Training	
	Training Plan and electronic copies of Training Materials	April 1 2016

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-28

☐ Other ☒ Amendment Number: 000002

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-W-12-013	04/30/2012 To 04/29/2017 Base Option Period Number 3	Integrated Systems in Communit

Contractor: INDUSTRIAL ECONOMICS, INCORPORATED

Specify Section and paragraph of Contract SOW:

Purpose:
- ☐ Work Assignment
- ☒ Work Assignment Amendment
- ☐ Work Plan Approval
- ☐ Work Assignment Close-Out
- ☐ Incremental Funding

Period of Performance: From 01/12/2016 To 04/29/2016

Comments:
The purpose of this amendment is to approve the contractor's work plan dated 3/11/16 for a total level of effort of 880 hours and $115,244.22 (b)(4) cost (b)(4) fee). The contractor is not authorized to go over the ceilings without the approval from the contracting officer.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): 22

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Cost/Fee:	LOE:
Contract Period: 04/30/2012 To 04/29/2017		880
This Action:		0
Total:		880

Work Plan / Cost Estimate Approvals

	Cost/Fee	LOE:
Contractor WP Dated:	Cost/Fee	LOE:
Cumulative Approved:	Cost/Fee	LOE:

Work Assignment Manager Name: Marilyn Tenbrink (Signature) (Date)	Branch/Mail Code: Phone Number: 401-782-3078 FAX Number:
Project Officer Name: Shannon Sturgeon (Signature) (Date)	Branch/Mail Code: Phone Number: 703-605-0509 FAX Number: 703-308-7903
Other Agency Official Name (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Eulvid Rocque (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-8316 FAX Number:

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-29

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-W-12-013	04/30/2012 To 04/29/2016	108b Project Planning &Support
	Base Option Period Number 3	

Contractor: INDUSTRIAL ECONOMICS, INCORPORATED

Specify Section and paragraph of Contract SOW:

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 04/30/2014 To 04/29/2016

Comments:
This initiates work assignment (WA) 3-29. Scott Palmer is appointed WA manager and Mike Pease appointed alt. WAM. The level of effort (LOE) is 448 hours. The statement of work is attached. The contractor shall submit a work plan and cost estimate in response to this request.

[X] Superfund — Accounting and Appropriations Data — [ ] Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): 22

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

Contract Period:	Cost/Fee:	LOE:
04/30/2012 To 04/29/2016		0
This Action:		448
Total:		448

Work Plan / Cost Estimate Approvals

	Cost/Fee:	LOE:
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Scott Palmer (Signature) (Date)	Branch/Mail Code: Phone Number: 703-308-8621 FAX Number:
Project Officer Name: Shannon Sturgeon (Signature) (Date)	Branch/Mail Code: Phone Number: 703-605-0509 FAX Number: 703-308-7903
Other Agency Official Name: (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Eulvid Rocque (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-8316 FAX Number:

Statement of Work
Work Assignment No. 3-29
EPA Contract #: EP-W-12-013

1. **TITLE: CERCLA 108(b) - Project Planning & Docket Support for 108b Rulemakings**

2. **PERIOD OF PERFORMANCE**: Date of CO signature through April 29, 2016

3. **WORK ASSIGNMENT MANAGER**:

Scott Palmer, Ph.D.
Program Implementation & Information Division
Cleanup Program Branch
Office of Resource Conservation & Recovery

Mailing Address:
US Environmental Protection Agency
MC 5305-P
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Phone: 703-308-8621
E-mail: palmer.scott@epa.gov

Alt WAM:

Michael Pease
Program Implementation & Information Division
Permits Branch
Office of Resource Conservation & Recovery

Mailing Address: Same as above
Phone: 703-308-0008
E-mail:pease.michael@epa.gov

4. **BREIF BACKGROUND ON PROJECT AND PRIOR CONTRACT SUPPORT:**

USEPA has been involved in significant ongoing analyses needed for promulgation of financial assurance regulations under CERCLA, 108(b). Substantial prior work has already been completed under former Work Assignments (WA's) with Industrial Economics (IEc). This work has been conducted on an ongoing basis over several periods of performance under this and other relevant contract vehicles.

Numerous tasks related to project managment and economic analyses have already been conducted, and are throughly outlined in the Scopes of Work and Approved IEc Work Plans for WA #B-7, WA #1-14, WA #2-14, and WA #3-14 of this contract, as well as other prior WA's associated with the CERCLA 108(b) Rulemaking (both with IEc and other contractors). Cost modeling and regulatory impact analyses are also currently underway via an amendment to WA #3-14.

This new current WA #3-29 will be used for purposes of obtaining broader project management contract services to support both the 108b Hard Rock Mining (HRM) and Additional Classes Rules. Extra project planning and docket preparation services have also been determined to be necessary for these rulemakings, given their complexity and extremely tight court-ordered deadlines for promulgation.

5. STATEMENT OF WORK FOR WA #3-29:

The subject rulemakings are being conducted on an extremely aggressive project schedule, which will merit much more work to be conducted over the period of this work assignment request. In order to produce the analyses necessary to support rule development and all of the steps associated with the Action Development Process, this work must be conducted on a rapid turnaround.

A wide array of analyses are needed for promulgation of this rule, and this work assignment therefore seeks to accommodate this with a scope of work comprised of several broadly defined tasks. These tasks together seek to cover the full breadth of analyses needed to assess the regulatory and economic impacts for the rule (subject to the limits of available data and funding). Such tasks will include more immediate high priority analyses needed earlier in the rulemaking schedule, versus longer term research needs (some of which will be identified as more decisions are made about the specific content and requirements to be set forth in the rule). Lastly, the work to be performed for WA #3-29 shall take advantage of all prior work conducted by IEc, as well as any and all results generated for the CERCLA 108(b) rulemaking via other contract vehicles (such as related risk analyses developed by Research Triangle, Inc., etc.).

[Note: Amendments may be added to this work assignment in order to continue and/or add similar types of contract services which may be needed on an ongoing basis over the duration of this rulemaking.]

Task 1: Work Plan and Budget Management

Within 20 calendar days of the receipt of the approved work assignment, the contractor shall deliver a work plan including a proposed level of effort by subtask, budget, and schedule of tasks through the term of performance. If there are any questions regarding the work plan, please contact the EPA WAM (and/or the Alternate WAM). The contractor shall maintain at least weekly communication with the EPA WAM and Alternate WAM in order to share any anticipated events which may cause an accelerated expenditure of approved funds for the period, and provide a monthly progress report regarding the status of work on the work assignment. The contractor shall also provide management oversight of the work assignment throughout its entire period of performance.

The contractor shall additionally provide a brief description (a sentence or two) in the monthly progress reports of the data-quality issues and activities achieved throughout the work assignment.

Summarized below are the primary tasks that I envision for the new WA.

Task 2: Project Planning

Task 2 calls for contractor assistance in developing and tracking project schedules and critical path analyses in order to complete all tasks necessary to meet court ordered deadlines for finalization of

the 108b HRM and Additional Classes Rules. These services shall be structured so as to achieve the simplest and most basic scheduling tools necessary to track progress, with minimal disruption and diversion of resources from more important tasks required to complete necessary analyses and preamble language for the rule.

Such project planning and management serves shall be limited to:

- o Expanding and refining current project schedules for the 108(b) Hard Rock Mining (HRM) proposed rulemaking, in order to document all critical elements of the analyses and individual project tasks, and to track progress towards meeting court order deadlines;

- o Maintaining a formal listing of all necessary Background Documents and Preamble that must be finalized for the rule, along with associated scheduling, task dependencies, and the tracking of status;

- o Identifying potential project management tools and software systems (such as SmartSheet, which has already been identified), that could most readily and easily facilitate improved tracking of project tasks for all of the 108(b) rules;

- o Creating a very basic planning document that can serve as the Analytical Blueprint for the 108b HRM rule. This shall include relying on older versions of such plans and incorporating the project scheduling materials to be conducted under this Task.

- o Developing broader summary Project Plans as necessary, as well as updating and monitoring the overall schedule of rulemaking milestones for the HRM rule;

- o Developing schedules for critical analyses and individual project tasks for the 108(b) Additional Classes rules, similar to those developed for the 108(b) Hard Rock Mining (HRM) rule; and

- o Developing broader Project Plans in order to update the overall schedules of rulemaking milestones as required to meet yet to be specified court ordered deadlines for the Additional Classes rules.

Draft scheduling documents and earlier versions of the analytical blueprint and framework for the rules will also be shared with the contractor as attachments to this WA Request, and/or directly via e-mail. Draft materials of immediate interest include:

- a list of tasks/analyses that are on the critical path for the proposed rule, along with projected deadlines for completion; and
- a list of necessary background documents and preamble language needed for the rule, along with projected dates for completion of draft documents and language.

[Note: All HRM related tasks and deliverables are to be considered a priority over those for Additional Classes. HRM work should generally be conducted prior to any work involving Additional Classes, and the associated schedules should reflect this.]

Task 3: Optional QA/QC of Policy Analyses, Cost Estimate Formula, Financial Assurance Requirements and Economics Analyses

Task 3 calls for contractor assistance in fulfilling potential QA/QA, analytical testing/validation, and expert input on economic and policy related analyses underlying the HRM rulemaking. Any such services under Task 3 shall be initiated based on Technical Directives issued by the Work Assignment Manager (WAM) on an as needed basis.

Such analytical QA/QC Efforts could include the following:

- o Supporting economic and risk based analyses conducted within ERAS, for purposes of contributing project management assistance, QA/QC of analyses and deliverables;
- o Providing auxiliary access to subcontractors with mining and/or financial assurance expertise; and
- o Conducting critical path analyses as necessary, which may not be otherwise covered by other 108(b) project leads.

[Note: The attainment of unbiased outside experts in the Mining and Financial Assurance professions may be needed for formula validation, beyond that already being conducted under WA #3-14. Such services could also expand beyond this to help evaluate other economic analyses and policy related features associated with the rule.]

Task 4: ICR Support for Additional Classes Rule

Task 4 is designed to address the potential need to solicit critical information from those industrial sectors encompassed within the scope of the Additional Classes rulemaking. Information Collection Requests (ICRs) are frequently used to gain insight into the size and operations of specific industries, as necessary to more appropriately design relevant regulations governing such industries. Task 4 calls for obtaining contractor assistance in planning for and formulating ICR materials as necessary for the Additional Classes rules, including both the identification of data needs for the rules and overall design of the survey instruments.

In order to conduct an ICR, numerous requirements under the Federal Paperwork Reduction Act (PRA) must be met. To satisfy the requirements of the PRA and associated regulations by the Office of Management and Budget (OMB), the Supporting Statement must be prepared and must clearly establish the **need for** and the **use of** the information, the **advantages** of the collection method(s) selected over alternative methods, and the **estimated costs** (both costs associated with the burden hours and capital costs) imposed on both respondents and Agency personnel by the collection.

In preparing the Supporting Statement, keep in mind that the PRA requires a Federal agency to:

- Request only the information needed to fulfill its program objectives;
- Impose the minimum burden on respondents;
- Avoid duplicating data already in the government's possession;

- Evaluate whether the burden can be reduced by using automated, electronic, mechanical, or other forms of information technology; and
- Demonstrate "practical utility"; that is, explain how the data--as collected, tabulated, and stored--will help the Agency meet its objectives in a timely manner."

Under Task 4, the contractor is to scope out the steps and feasibility of preparing a Supporting Statement as necessary to conduct an ICR for one or more of the sectors encompassed within the Additional Classes rule, based on the 5 bulleted points above. Contract services shall serve to describe the likely strength/defensibility of such a Supporting Statement and its likelihood for success. Under the scope for Task 4, the contractor shall also establish projections of the costs and turnaround that should be expected should such an ICR ultimately be conducted. Task 4 should be considered as a thorough scoping exercise, complete with PowerPoint materials that can be used to brief management and the workgroup on the subject findings. However, Task 4 is not intended to include any labor hours for the final preparation nor implementation of the ICR. Any ICR will commence only after the results of this scoping exercise set forth under Task 4 is complete.

Task 5: Creation of Centralized Database of Background Documents for the 108b HRM and Additional Classes Rules

Task 5 calls for development of a centralized database for Reference Documents, Analyses, and Research Deliverables. This database will help facilitate ready access to reference materials and shall serve as Repository that can be used in preparing the Docket for the 108b rules. What's more, this database will make numerous existing financial assurance related reference materials more readily available for later work proceeds in the design and development of the rules for the Additional Classes.

The contractor shall first assess the need and options for developing such an information management system for the CERCLA 108(b) rulemakings. Specifically, this system would serve as a repository for relevant documents and other information necessary for the formal docket. Issues to explore include: (1) server hosting facility (EPA; contractor; or cloud-based); (2) related security and accessibility issues; (3) user interface (ease of use, searching capabilities); and (4) integration with the formal docket system, FDMS. Open source or proprietary options may be considered with respect to these issues, along with cost. In addition, the contractor shall outline necessary protocols for identifying documents/information resources that must be housed in the system, steps for transmitting/uploading files, and training for users.

[Note: Given the urgency of this work and the short timeline for completion of the rule, both the cost and ease of use are the most critical criteria for the final selection of a system for this subject Docket Database. The chosen system will need to be off-the-shelf and immediately ready for implementation.]

6. CONTRACTOR QA AND DATA DELIVERABLE REQUIREMENTS

The contractor shall comply with all applicable requirements of the contract, including compliance with all quality-assurance standards, provision of monthly invoices detailing progress and for notifying the WAM of the status of remaining funds, and other such requirements. The contractor must also ensure that the data collected for the characterization of environmental processes and conditions contain the

appropriate QA/QC requirements to support the intended use of the data. In addition, the contractor shall make use of the following in developing the appropriate QA/QC requirements: *Guidance for Data Quality Objectives* (EPA QA/G-4), and *Guidance for Quality Assurance Project Plans* (EPA QA/G-5). These documents and others can be found at the following Agency website: http://www.epa.gov/quality/qs-docs/. Furthermore, all data and supporting documents used in the performance of this contract and all associated analyses shall be provided to EPA at the completion of the work, as well as at any such time that it is requested by the WAM or Alt. WAM.

7. OVERALL SCHEDULE FOR DELIVERABLES

Task and Deliverable for WA # 3-14	Estimated Delivery (days include weekdays and weekends)
Task 1 – Workplan and Budget Management	
Deliverable 1: Workplan and Budget	20 days after receipt of the approved work assignment.
Task 2: Project Planning	
Draft Deliverable 2-I: Project List of Tasks and Associated Deadlines for the HRM Rule	10 days after Work Plan Approval
Draft Deliverable 2-II: List for Tracking Status of Background Documents and Preamble for the HRM Rule	10 days after Work Plan Approval
Draft Deliverable 2-III: SmartSheet Schedule and Flow Charts for the HRM Rule	14 days after Work Plan Approval
Final Deliverable 2-IV: Project Lists for documentation and tracking of Tasks, Deadlines, Background Documents, and Preamble for the Additional Classes Rule	All final deliverables due within 7 days of WAM comments on Drafts. (Changes and updates to these documents will continue to be ongoing thereafter, without any preset deadlines.)
Task 3: Optional QA/QC Services	
Deliverable 3(a): QA/QC of Policy Analyses Deliverable 3(b): QA/QC of Engineering Costs and Cost Formulas Deliverable 3(c): QA/QC of Financial Assurance Practices	Task 3 delivery deadlines are yet unknown – and will be determined based on the scope and timing of technical directives requested by the WAM.

Task 4: ICR Support for Additional Classes Deliverables: • Draft Scoping Paper • Final Scoping Paper • PowerPoint materials summarizing findings & recommendations	• 28 days after Work Plan Approval • 7 days after WAM comments on draft paper • 7 days after WAM comments on draft paper
Task 5 – Creation of Centralized Database for Docket Deliverable 5-I: Draft Recommendations Outlining Approach to Establishing Centralized Database Deliverable 5-II: Submission of initial version of database for review.	Within 21 Days of Work Plan approval. Within 35 Days of Work Plan approval (Subsequent changes and updates to these data systems will continue thereafter on an ongoing basis, without any preset deadlines.) (All versions of relevant system databases for the project (in Access, etc.) are to be provided upon request, and/or upon completion of the overall project.)

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-29

☐ Other ☒ Amendment Number: 000001

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-W-12-013	04/30/2012 To 04/29/2016 Base Option Period Number 3	108b Project Planning Support

Contractor: INDUSTRIAL ECONOMICS, INCORPORATED

Specify Section and paragraph of Contract SOW:

Purpose:
- ☐ Work Assignment
- ☒ Work Assignment Amendment
- ☐ Work Plan Approval
- ☐ Work Assignment Close-Out
- ☐ Incremental Funding

Period of Performance: From 04/30/2014 To 04/29/2016

Comments:
The purpose of this amendment is to approve the contractor's work plan/cost estimate dated 12/08/2015 with a level of effort of 448 hours and $45,472.23 (b)(4) cost (b)(4) fee). The contractor is not allow to go over the approved ceilings without the approval of the Contracting Officer.

☒ Superfund — Accounting and Appropriations Data — ☐ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): 22

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Cost/Fee:	LOE:
Contract Period: 04/30/2012 To 04/29/2016		448
This Action:		0
Total:		448

Work Plan / Cost Estimate Approvals

	Cost/Fee:	LOE:
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Scott Palmer (Signature) (Date)	Branch/Mail Code: Phone Number: 703-308-8621 FAX Number:
Project Officer Name: Shannon Sturgeon (Signature) (Date)	Branch/Mail Code: Phone Number: 703-605-0509 FAX Number: 703-308-7903
Other Agency Official Name (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Eulvid Rocque (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-8316 FAX Number:

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-29

☐ Other ☒ Amendment Number: 000002

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-W-12-013	04/30/2012 To 04/29/2017 Base Option Period Number 3	CERCLA 108b Project Planning

Contractor: INDUSTRIAL ECONOMICS, INCORPORATED

Specify Section and paragraph of Contract SOW:

Purpose:
- ☐ Work Assignment
- ☒ Work Assignment Amendment
- ☐ Work Plan Approval
- ☐ Work Assignment Close-Out
- ☐ Incremental Funding

Period of Performance: From 04/30/2014 To 04/29/2016

Comments:
The purpose of this amendment is to de-scope 256.6 level of effort, (LOE) and $10,605.95 (b)(4) cost + (b)(4) fee) on this work assignment due to postponing work for task 4. The new total ceiling is now 191.4 LOE and $34,866.28 (b)(4) cost (b)(4) fee). The contractor is not allowed to go over the

☒ Superfund — Accounting and Appropriations Data — ☐ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): 22

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Cost/Fee:	LOE:
Contract Period: 04/30/2012 To 04/29/2017		448
This Action:		-257
Total:		191

Work Plan / Cost Estimate Approvals

	Cost/Fee	LOE
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Scott Palmer (Signature) (Date)	Branch/Mail Code:	
	Phone Number:	703-308-8621
	FAX Number:	
Project Officer Name: Shannon Sturgeon (Signature) (Date)	Branch/Mail Code:	
	Phone Number:	703-605-0509
	FAX Number:	703-308-7903
Other Agency Official Name (Signature) (Date)	Branch/Mail Code:	
	Phone Number:	
	FAX Number:	
Contracting Official Name: Eulvid Rocque (Signature) (Date)	Branch/Mail Code:	
	Phone Number:	202-564-8316
	FAX Number:	

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-30

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-W-12-013	04/30/2012 To 04/29/2016	Quendall Terminals SF
	Base Option Period Number 3	

Contractor: INDUSTRIAL ECONOMICS, INCORPORATED

Specify Section and paragraph of Contract SOW:

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 12/02/2015 To 04/29/2016

Comments:
This action initiate's Work assignment (WA) 3-30. Claire Hong is appointed as the work assignment manager (WAM). The Level of Effort (LOE) is 375 hours. The statement of work is attached. The contractor shall submit a work plan and cost estimate as it relates to this request.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): 22

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Cost/Fee:	LOE:
Contract Period: 04/30/2012 To 04/29/2016		0
This Action:		375
Total:		375

Work Plan / Cost Estimate Approvals

	Cost/Fee:	LOE:
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Claire Hong (Signature) (Date)	Branch/Mail Code: Phone Number: 206-553-1813 FAX Number:
Project Officer Name: Shannon Sturgeon (Signature) (Date)	Branch/Mail Code: Phone Number: 703-605-0509 FAX Number: 703-308-7903
Other Agency Official Name: (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Eulvid Rocque (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-8316 FAX Number:

CONTRACT NAME: ERAS Analytical Support Contract
CONTRACTOR: Industrial Economics, Incorporated

CONTRACT NO. EPW – 12-013

Work Assignment No. WA 3-30

Contracting Officer Representative (COR):
Claire Hong
U.S. EPA Region 10
Office of Environmental Cleanup (ECL-122)
1200 Sixth Avenue, Suite 900
Seattle, WA 98101
hong.claire@epa.gov Phone: (206) 553-1813
Fax: (206) 553-8581

TITLE: Ability to Pay Analyses for Potentially Responsible Parties Associated with the Quendall Terminals Superfund Site, Renton, WA (WAD 980639215)

BACKGROUND

The Quendall Terminals Superfund Site covers approximately 51 acres and is located at 4503 Lake Washington Boulevard in Renton, WA. Approximately 22 acres of the Site are located on uplands adjacent to Lake Washington and approximately 29 acres are located within Lake Washington immediately west of the Quendall Terminals property.
The Site was formerly used as a creosote manufacturing facility.

Reilly Tar & Chemical Company, a predecessor-in-interest of Vertellus Specialties, Inc., began creosote operations at the Site in 1916. The operations included: a T-Dock that protrudes into Lake Washington, and was located approximately 1200 feet offshore, that was used to load and unload materials, including coal tar, that were delivered to or from the operations; a still house where coal tar was distilled, and creosote and light distillates were transferred from to surrounding tanks via piping; a railroad tank car loading area, which was owned by BNSF Railway during the relevant period of operations, that was used to deliver materials to or from the operations; sumps which contained cooling coal tars and creosote; and the a pond which received overflow wastes from one of the sumps and tank bottoms from storage tanks. Spill of materials are associated with each of these areas. Waste materials were also used to provide fill at the Site. [Reilly Tar & Chemical conducted operations at the Site until 1971.]

Reilly Tar & Chemical Company sold the Site property (upland portion and a portion of the Lake Washington area to Altino Properties, Inc., and Puget Timber Company in 1971. Altino Properties, Inc. is a wholly owned subsidiary of Barbee Mill Co., Inc., which is a wholly owned subsidiary of Barbee Forest Products, Inc. Puget Timber Company is a wholly owned subsidiary of J.H. Baxter & Co. Altino Properties, Inc. and Puget Timber Company are the current owners of the Site property.

Creosote manufacturing operations at the Site resulted in releases of several hazardous substances at the Site. The constituents of dense non-aqueous liquid phase, "DNAPL," contamination is widespread and found in several locations – soil, sediment, and groundwater -- at the Site contain typical characteristics of coal tar and creosote. For example, samples of DNAPL contained high concentrations of polynuclear aromatic hydrocarbons (PAHs), including naphthalene in ranges of 5.2 to 18 percent of the sample; carbazole, a

heterocyclic compound, at ranges between .11 to .36 percent; and total benzene, ethylbenzene, toluene, and xylene at concentrations ranging from .15 to 6.7%. In addition, sampling revealed plumes of benzene and naphthalene plumes that extend beyond the area where DNAPL contamination is present. The distribution of sediment contamination are highest in the nearshore groundwater discharge area and the T-Dock area. EPA estimates that there are approximately 445,000 gallons of DNAPL present in 9.7 acres of soil and sediment at the Site.

The EPA has received responses to Information Requests sent under Section 104(e) of CERCLA. To date, three parties have indicated that they may assert an inability to pay claim.

PURPOSE AND OBJECTIVES

The purpose of this work assignment is to obtain the services of expert financial analysts (e.g. a certified public accountant experienced in analyzing the fiscal health of corporations) in order to review, verify and analyze the financial ability of the Vertellus Specialties, Inc., the Altino Properties, Inc., and the J.H. Baxter & Co. to reimburse all or a portion of EPA's waste cleanup costs incurred at the Quendall Terminals Site. The contractor shall use, but is not limited to, the information provided by the Potentially Responsible Parties to EPA. The contractor shall provide data/information gathering and analysis that ensures a high quality and defensible financial analysis. All aspects of data collection, review and verification shall be conducted and documented in accordance with financial industry-accepted guidelines. The contractor should be well versed in using and evaluating inputs to the BEN, ABEL, and INDIPAY penalty and financial models used by the Environmental Protection Agency.

Task 1: Work Plan

Prepare and submit a Work Plan that includes a detailed description of the tasks activities, performance monitoring, and overall management strategy. Typical activities involved in preparing the staffing plan include, but are not limited to the following:

1. A staffing plan that identifies personnel who will work on the work assignment;
2. A work schedule identifying significant milestones and deliverables;
3. Quality assurance measures;
4. A conflict of interest certification; and,
5. A price proposal for performance of the work required on the work assignment, including a breakdown of the price per individual (identified by name) in each labor category, along with the cumulative estimated hours for each labor category. Other costs – including ODCs – shall be identified in the proposal.

Task 2: Data and Information Collection, Analysis and Management

Utilizing a certified public accountant experienced in analyzing the fiscal vitality of corporations, the contractor will review, verify and analyze the financial ability of three corporations to substantially contribute to the remedial costs at the Quendall Terminals Superfund Site. The contractor shall use, but is not limited to, the information provided by the Potentially Responsible Parties. The contractor shall provide data/information gathering and analysis that ensures a high quality and defensible financial analysis. All aspects of data collection, review and verification shall be conducted and documented in accordance with financial industry-accepted guidelines. All documents prepared under this task shall respond to issues identified by EPA during the initial planning call and subsequent communications and include supporting references and rationale for the recommendations and conclusions given. The contractor shall ensure that all draft and final documents display financial accuracy and defensibility. The contractor team should include

individuals familiar with the business sectors associated with the PRPs being evaluated.

The contractor shall evaluate the ability to pay analysis provided by the Vertellus Specialties, Inc. This contractor will advise the EPA on deficiencies in the analysis, and may provide additional questions that could be asked in future Information Requests under Section 104(e) of CERCLA.

Confidentiality Agreement

The Contractor recognizes that the Contractor employees performing tasks specified by this task order may have access to data or information, either provided by the government or first generated during task order performance, of a sensitive nature which should not be released to the public without approval from the Environmental Protection Agency (EPA). Much of the information to be provided to the contractor has been claimed as Confidential Business Information (CBI) by an entity. Therefore, the Contractor agrees to obtain confidentiality agreements from each of its employees assigned to work on this task order (including subcontractors or consultants) before they perform any work under this task order.

Such agreements shall contain provisions which stipulate that each employee agrees that the employee will not disclose, either in whole or in part, to any entity external to the EPA, the Department of Justice, or the Contractor, any information or data (as defined in FAR Section 27.401) provided by the government or first generated by the Contractor, any site-specific cost information, or any enforcement strategy without first obtaining the written permission of the EPA Project Officer. If a Contractor, through an employee or otherwise, is subpoenaed to testify or produce documents, which could result in such disclosure, the Contractor must provide immediate advance notifications to the EPA so that the EPA can take action to prevent such disclosure.

Task 3: Document Preparation

All documents prepared under this task shall respond to issues identified by EPA and include supporting references and rationale for the recommendations and conclusions given. The contractor shall ensure that all draft and final documents display financial accuracy, defensibility, are error-free and are editorially correct.

Schedule of Deliverables

The contractor shall perform/submit the following tasks and deliverables at the timeframe specified below:

Deliverable Title	**Due Date**
Initial Planning Conference Call & Response to WA	Schedule call within 5 days of receipt of WA
Workplan, staffing and budget	Within 7 days of the initial planning call
Confidentiality Agreements including specific provisions for Confidential Business Information	Within 4 days of the EPA's approval of the staffing and budget
EPA to provide information including responses to 104(e) Information Requests, and other relevant information.	TBD

Contractor Review EPA-provided information and identify any additional needed information	Within 20 days of receipt.
EPA obtains additional information from the Potentially Responsible Parties	TBD
EPA directs Contractor to obtain additional information, if necessary	Within 5 day of request.
Initial written analysis	Within 20 business days of receipt of all financial information.
Conference call to discuss initial analysis; contractor to provide meeting notes	Within a week of EPA's receipt of initial written analysis; notes delivered within one day of call.
Complete any follow-up issues identified during above call	Within a week of conference call re: initial analysis.
Deliver final written report	Within a week of conference call re: initial analysis.

Note: All deliverables will be submitted to both the COR and any Regional lead case contact(s).

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-30

☐ Other ☒ Amendment Number: 000001

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-W-12-013	04/30/2012 To 04/29/2016	Ability to Pay, Quendall
	Base Option Period Number 3	

Contractor: INDUSTRIAL ECONOMICS, INCORPORATED

Specify Section and paragraph of Contract SOW:

Purpose:
- ☐ Work Assignment
- ☒ Work Assignment Amendment
- ☐ Work Plan Approval
- ☐ Work Assignment Close-Out
- ☐ Incremental Funding

Period of Performance: From 12/02/2015 To 04/29/2016

Comments:
The purpose of this amendment is to approve the contractor's workplan/cost estimate dated 12/21/2015 with a level of effort (LOE) of 394 hours and $42,582.18 (b)(4) cost (b)(4) fee). The contractor is not allowed to go over the approved ceiling without the approval from the Contracting Officer.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): 22

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Contract Period:	Cost/Fee:	LOE:
	04/30/2012 To 04/29/2016		375
This Action:			0
Total:			375

Work Plan / Cost Estimate Approvals

Contractor WP Dated:	Cost/Fee:	LOE:
Cumulative Approved:	Cost/Fee:	LOE:

Work Assignment Manager Name: Claire Hong (Signature) (Date)	Branch/Mail Code: Phone Number: 206-553-1813 FAX Number:
Project Officer Name: Shannon Sturgeon (Signature) (Date)	Branch/Mail Code: Phone Number: 703-605-0509 FAX Number: 703-308-7903
Other Agency Official Name: (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Eulvid Rocque (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-8316 FAX Number:

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-31

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-W-12-013	04/30/2012 To 04/29/2017 Base Option Period Number 3	Clean Up Enforcement Program M

Contractor	Specify Section and paragraph of Contract SOW
INDUSTRIAL ECONOMICS, INCORPORATED	PR Task 3 Paragraphs 2 & 3

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 04/30/2015 To 04/29/2016

Comments:

This amendment initiates work assignment 3-31 "Clean Up Enforcement Program Measures" with a level of effort of 184 hours. Paul Borst is appointed the work assignment manager (WAM) and Mary Bell is appointed the alt. WAM. The statement of work is attached. The contractor shall provide a work plan and cost

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): 22

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Cost/Fee	LOE
Contract Period: 04/30/2012 To 04/29/2017		0
This Action:		184
Total:		184

Work Plan / Cost Estimate Approvals

Contractor WP Dated:	Cost/Fee	LOE:
Cumulative Approved:	Cost/Fee	LOE:

Work Assignment Manager Name: Paul Borst (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-7066 FAX Number:
Project Officer Name: Shannon Sturgeon (Signature) (Date)	Branch/Mail Code: Phone Number: 703-605-0509 FAX Number: 703-308-7903
Other Agency Official Name: (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Eulvid Rocque (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-8316 FAX Number:

EPA CONTRACT EP-W-12-013
Statement of Work

Work Assignment No: 3-31

Title: Clean Up Enforcement Program Measures, Indicators & Superfund Futures - Support and Analysis

Period of Performance: Date of issuance through April 29, 2016

Estimated Level of Effort: 184 hours

Contract Officer Representative:

Paul Borst
OECA/OSRE/PPED/PECB
Tel: 202/564-7066 Fax: 202/564-0027

Alternate Contract Officer Representative:

Mary Bell
OECA/OSRE/PPED/PECB
Tel:202/564-2256 Fax 202/564-0027

Background

For several years, EPA's Office of Enforcement and Compliance Assurance (OECA) has been moving further towards reporting its programmatic accomplishments in terms of environmental results. This direction is reflected in EPA's draft 2014-2018 strategic plan in which OECA commits to "protect communities by requiring responsible parties to conduct cleanups, saving federal dollars for sites where there are no other alternatives. Aggressively pursuing these parties to clean up sites ultimately reduces direct human exposures to hazardous pollutants and contaminants, provides for long-term human health protection, and makes contaminated properties available for reuse." (EPA 2014-2018 Strategic Plan, p. 40)

The Office of Site Remediation Enforcement (OSRE) is currently conducting the Clean Up Enforcement Program Vision, Communication and Measures Initiative (VCMI) to better describe and characterize program accomplishment and outcomes. This work assignment will provide contractor support for the VCMI Project through providing data to better characterize and explain the activities (outputs) and results (outcomes) from OSRE efforts.

Purpose and Scope of Work

The purpose of this work assignment is to provide support and analysis to EPA through completion of this project. This support and analysis will come in the form of:

* Complete Work Plan (Task 1)
* Conduct Data Analysis to Characterize EPA's Cleanup Enforcement Program Accomplishments and Outcomes (Task 2)
* Provide support for developing Superfund Futures for the Cleanup Enforcement Program (Task 3)

Work Statement

Task 1 - Work Plan and Budget

Within 20 days of the receipt of this work assignment, the contractor shall deliver a management work plan, including a proposed level of effort, budget, and schedules of all tasks. The output of this task is the work plan. The work plan shall include at least the following: a list of tasks and description of the methods for performing each task; schedule; estimated direct labor hours by task and labor level; budget with costs broken down by line item; and names, hours, project roles of level 2, 3, and 4 staff and a quality assurance plan (QA Plan). The QA Plan shall maintain all source documentation, validate data and document any known data limitations as described below. The monthly progress reports for this WA shall include the estimated cumulative hours and dollars incurred through the end of the reporting period, including unbilled hours and dollars. The contractor shall notify the EPA Contract Officer, Project Officer, and COR when 75% of the work plan hours or costs have been incurred, including unbilled costs.

Task 2 – Conduct Data Analysis to Characterize EPA's Cleanup Enforcement Program Accomplishments and Outcomes

The contractor shall conduct data analysis to better explain and describe both activities and results (i.e. outputs and outcomes) from the EPA Cleanup Enforcement Program. The specific data shall come from US Census Data, or other data sources as provided for in technical direction. The contractor shall include a list of draft EPA Clean Up Enforcement Program Measures & Indicators as agreed through discussion between the contractor and EPA. In addition, the screening and analysis of the data, the contractor shall validate all data inputed and output data in accordance with the QA plan developed under the work plan described in Task 1 above.

Deliverable	*Due Date*
Initial Data Report Characterizing Acitivities and Results from EPA's Cleanup Enforcement Program	Within fourteen calendar days of receipt of Contract Officer Representative's comments provided through written technical directive.
Revised Data Report Characterizing Acitivities and Results from EPA's Cleanup Enforcement Program	Within fourteen calendar days of receipt of Contract Officer Representative's comments provided through written technical directive.

The contractor shall provide one electronic copy of all data/ results to the COR, per the deliverable schedule above. The contractor shall be prepared to discuss by phone with the EPA Contract Officer Representative to review data, discuss data limitations with regard to Clean Up Enforcement Program Vision, Communication and results.

Task 3 – Provide support for developing Superfund Futures for the Cleanup Enforcement Program

The contractor shall provide support to the EPA Cleanup Enforcement Program in the form of written memorandum for supporting the Superfund Futures Initiative. This support shall include focusing on specific national sectors, types of sites and/or media to address recurring, pervasive, and emerging cleanup enforcement challenges. The contractor will help develop tools and strategies for cross agency challenges.

Deliverable	*Due Date*
Initial Memorandum for Superfund Futures Initiative for EPA's Cleanup Enforcement Program	Within fourteen calendar day of receipt of Contract Officer Representative's comments provided through written technical directive.
Revised Memorandum for Broad-based Strategic Measures and Indicators for EPA's Cleanup Enforcement Program	Within fourteen calendar days of receipt of Contract Officer Representative's comments provided through written technical directive.

The contractor shall provide one electronic copy of all data/ results to the COR, per the deliverable schedule above. The contractor shall be prepared to discuss by phone with the EPA

Contract Officer Representative to review data, discuss data limitations with regard to Clean Up Enforcement Program Vision, Communication and Measures Initiative and results.

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-31

☐ Other ☒ Amendment Number: 000001

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-W-12-013	04/30/2012 To 04/29/2017 Base Option Period Number 3	OECA {erfpr,amace <etrocs Dev.

Contractor: INDUSTRIAL ECONOMICS, INCORPORATED

Specify Section and paragraph of Contract SOW:

Purpose:
- ☐ Work Assignment
- ☒ Work Assignment Amendment
- ☐ Work Plan Approval
- ☐ Work Assignment Close-Out
- ☐ Incremental Funding

Period of Performance: From 03/17/2016 To 04/29/2016

Comments:
The purpose of this amendment is to approve the contractor's work plan/cost estimate dated April 6, 2016 with a level of effort (LOE) of 184 hours and $18,396.18 (b)(4) cost (b)(4) fee). The contractor is not allowed to go over the approved ceilings without the approval of the Contracting Officer.

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*): 22

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Contract Period:	Cost/Fee:	LOE:
	04/30/2012 To 04/29/2017		184
This Action:			0
Total:			184

Work Plan / Cost Estimate Approvals

Contractor WP Dated:		Cost/Fee	LOE:
Cumulative Approved:		Cost/Fee	LOE:

Work Assignment Manager Name: Paul Borst (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-7066 FAX Number:
Project Officer Name: Shannon Sturgeon (Signature) (Date)	Branch/Mail Code: Phone Number: 703-605-0509 FAX Number: 703-308-7903
Other Agency Official Name: (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Eulvid Rocque (Signature) (Date)	Branch/Mail Code: Phone Number: 202-564-8316 FAX Number: